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W. C. MONROE—President and Editor
LARRY O. MILLER, Advertising Manager

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KINZIE MILLER—Vice President

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# Washington Highlights

Edward I. McLarney, Deputy Commissioner of the income tax unit of the Bureau of Internal Revenue, has made it known that corporations will not be required to state in their 1947 tax returns whether they have distributed at least 70 per cent of their profits to stockholders. Moreover, they will not be compelled to explain why not in those cases where less than 70 per cent was distributed. The ruling leaves the enforcement policy unchanged, meaning only that the question will not be asked. The Internal Revenue code, Sec. 102, penalizes corporations which retain earnings not a business need.

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Citing that the United States had made commitments for sales of 96 tankers to foreign countries, Raymond S. McKeough, member of the Maritime Commission, said the Government could not now conscientiously back down in its obligations. He told the Senate small business committee the Cabinet has asked the commission to handle the sales and he was making no apologies for fulfilling a promise of the Government. McKeough was answering Committee Chairman Wherry, who argued that the tanker transfer is "illegal and unwise." Wherry contends that the tankers should be sold to American oil companies in order to aid in augmenting petroleum supplies on the East Coast. The small business committee has been investigating the transfer, which thus far has involved the delivery of 31 of the tankers abroad. Others are in the course of being processed for sale.

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Resignation of John A. Loftus as chief of the petroleum division of the State Department has been accepted by State Secretary Marshall. Charles B. Rayner, petroleum advisor to the State Secretary, also has withdrawn from office. In the future these two posts will be combined under the petroleum division with one in authority to advise the Secretary of the petroleum policy and oil problems related thereto.

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When the Texas Eastern Transmission Co. paid the Government $143,127,000 for the Big and Little Big Inch pipelines, the most important surplus war assets sales to private interests on record was completed. The company was recently organized under Delaware laws. The lines will be used to carry natural gas in the northeastern portion of the country. Under the terms of the sale, the Government can for indefinite periods take back the pipelines if national defense makes this action necessary. The sales contract also requires that the method of operation be so designed to facilitate the changing of the lines from gas to oil as a war contingency.

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Petroleum contains an invaluable bacteria that improves and puts nitrogen into soil. Kerosene and many other types of crude oil components strengthen Old Mother Earth in both quality and productivity. Petroleum's new role as an aid to vegetable farming is largely the results of agricultural studies sponsored by the Government's experimental station at Weslaco, Tex. W. H. Friend, head of the station, has found that spraying oil on soil will discourage the growing of tiny grasses and pigweed in the carrot patch and the carrots will mature faster if the ground is coated with oil. He pointed out that hand-weeding of a carrot patch, usually runs from $40 to $50 an acre. These same useless plants can be killed by the oil treatment at a cost of $8.50 to $12 an acre.

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Washington observed with interest the meeting in New Orleans of mayors, city managers and other officials, which in a formal recommendation urged Congress to pass legislation which in effect would undo the Supreme Court decision in the California tideland case and restore rights to coastal lands to the individual states. Advices received here from Sacramento, indicated that California's vast net work of state parks, beaches and state memorials is seen by the legislature as suffering a terrific financial blow from the decree of the high court. Millions of dollars in oil royalties annually accruing to the state have been annulled by the decision. The royalties paid were for acquisition and upkeep of parks, beaches and other public recreational areas.

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# The Fuel and Energy Outlook in the West

By Marion E. Dice

**Manager, Economics Department**
**General Petroleum Corporation**
**Los Angeles, California**

How adequate are the energy resources of the Pacific Coast? How long can they sustain the unprecedented influx of population which occurred during the war, continued after the war, and for which no end is in sight? Will the limit of this growth be determined by the supply of fuel and energy?

We do not think so. Other factors, particularly water supply, are more likely to set the limit than fuels. However, the problem is of such fundamental importance that it behooves the petroleum industry to take stock of the situation at frequent intervals. We must look as far into the future as possible and chart our course most carefully. The voyage is an expensive one from the standpoint of capital requirements and the shoals of the oil business are cluttered with the wrecks of shortsighted enterprises.

One of our office mottos is "The past is the best guide to the future." So let us begin today by reviewing the effects of the war and the great westward migration upon our western fuel outlook. We shall start with two fundamental facts—one of which is well known and one which is not. The population of the Pacific Coast states was 10.4 million in 1940 and is now over 14.5 million. This is an increase of 39 per cent in seven years whereas the normal increase would have been one per cent per year, compounded. This means that we have compressed 33 years of normal growth into the past seven years. But these facts are known to all of you.

The second fact may come as a surprise. It did to me. The total consumption of energy has increased 72 per cent during the period that the population increased 39 per cent. This means that the West has experienced a large increase in the **per capita** consumption of energy. To reach this conclusion we took the total consumption of all forms of energy—oil, gas, hydroelectric power, coal, wood, etc., converted them to a common basis by using their respective B.t.u. equivalents, and divided by the population. (See Table A.)

It is necessary to consider all of these sources of energy because they are interchangeable to a considerable extent. Some operations which use natural gas on an interruptible contract basis switch to another fuel during cold weather when gas is needed for house heating and other "firm" customers. The demand for gas and the demand for oil are therefore not independent of each other and must be considered as a whole in a study such as this.

Of still greater importance at the moment is the interrelation between electric energy and petroleum fuels. The western states have this year experienced the lowest rainfall and snowfall in a generation. There is a demand for even more electric power than the hydroelectric plants can generate when operating to capacity, yet the amount of water behind the dams has been so deficient that the power output has been curtailed. As a result, the power companies have been burning far more gas and fuel oil than normal in their steam plants.

Thus we have had three pyramiding influences which have boomed the demand for oil and gas. First, four million more people came west; second, the West consumed 24 per cent more energy per person; third, oil and gas were called upon to shoulder part of the load for manufacturing electric power when hydroelectric power sources were curtailed by lack of rainfall. These are the main influences at work. There are secondary influences such as the high level of employment in nearly all industries, high wages and incomes, and a large demand for all kinds of goods. These are all well-known. The net result of them is a total petroleum demand in 1947 which will average more than 10 per cent above 1946 and 47 per cent above 1939-1940. Let us mention briefly some of the ways in which various influences contributed to the increase:

### Motor Gasoline

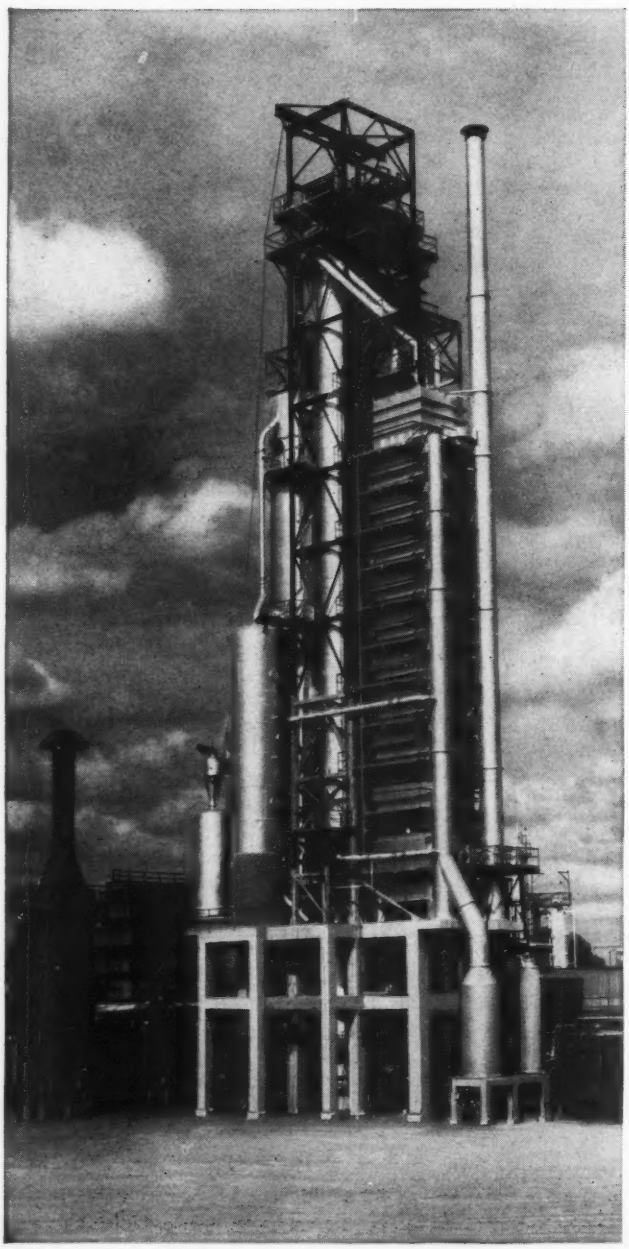
The motoring public has been on a perfectly understandable gasoline buying binge ever since the end of rationing. Taxable sales in California for the first seven months of 1947 were 13.5 per cent higher than the record 1946 levels. New cars are becoming available in increasing numbers and old cars are being maintained in excellent repair. The automobile has become an indispensable part of western life. Its use will continue to increase in future years. The universal 5-day week and vacations with pay are enabling the average family to roam the West and enjoy travel habits which were once the privilege of few. We expect a continuation in the upward demand for gasoline for the next few years although at a

**TABLE A**

**PER CAPITA CONSUMPTION OF ENERGY, 1947 vs. 1940**
**Millions of B.t.u.'s per Person. Pacific Coast States**

| | YEAR 1947 (Estimated) | | | | |
|---|---|---|---|---|---|
| | Million B.t.u. Per Capita | Per Cent of Total | Million B.t.u. Per Capita | Per Cent of Total | Percentage Increase 1947 vs. 1940 |
| Petroleum | 131.7 | 70.0% | 101.3 | 66.7% | 30.0% |
| Natural Gas | 38.1 | 20.2 | 32.0 | 21.1 | 19.1 |
| Oil & Gas, Total | 169.8 | 90.2 | 133.3 | 87.8 | 27.4 |
| Hydroelectric Power | 7.8 | 4.1 | 5.6 | 3.7 | 39.3 |
| Coal & Wood | 10.7 | 5.7 | 13.0 | 8.5 | 17.7 |
| TOTAL | 188.3 | 100.0% | 151.9 | 100.0% | 24.0% |
| Total B.t.u.'s—Trillions | 2,722 | | 1,586 | | 71.6% |
| Population—Millions | 14.5 | | 10.4 | | 38.8% |

# Lion's new TCC unit goes on stream!



**On September 16, the sixty-seventh Houdry-licensed cat cracker—and the thirty-eighth T C C—went on stream in the refinery of Lion Oil Company at El Dorado, Arkansas. This unit is of 4,500 bbl. fresh feed capacity, with 900 bbls. additional capacity for recycling.**

**This new Lion unit will process high-sulfur crude (1.8% in the reactor charge). Corrosion protection is provided by lining the reactor, fractionating tower and all vessels with alloyed steel.**

**In actual operation, this new T C C unit is running 20% over design capacity, enabling Lion to maintain the high octane quality of its motor gasoline output at considerably reduced costs. And, with built-in recycling, the refiner will be able to vary his product distribution at will, according to seasonal demands.**

**These are advantages inherent in T C C which have made it the catalytic cracking process outstandingly favored by refineries of relatively moderate size. Details will be furnished gladly to interested refiners.**

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slackening rate. The number of registered vehicles should increase steadily for several years. The ratio of persons per vehicle will probably fall from the present 2.9 to the 1941 ratio of 2.5 by 1950.

Motor fuel consumption per vehicle is likely to drop somewhat from the present high level by 1950 for two reasons. First, the number of two-car families will increase, and while such a family uses more gasoline than a one-car family, it does not use twice as much. Second, there should be a substantial increase in the number of miles per gallon delivered by improved engines in the next few years. We are assuming an average of 25 miles per gallon for post-war models. We do not know when these will arrive. They may appear in 1948.

### Mechanization of Farms

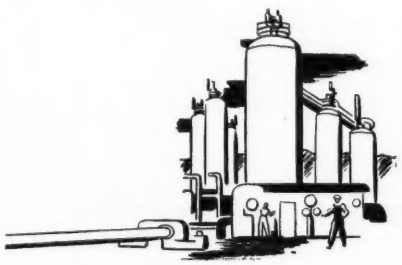
The consumption of petroleum on farms has grown rapidly in the 25 years 1920-45. The number of motor trucks on American farms has been multiplied by 11. The number of tractors has been multiplied by 9. The number of horses and mules has been cut in half. Employment on farms has dropped from 10.7 per cent to 7.5 per cent of the population. At the same time, the farm production per worker has increased 42 per cent. Most of this is due to mechanization and to the release of millions of acres and man hours formerly required to grow food for horses and mules. Mechanization in the west has long been ahead of the United States average. With 5 per cent of the total number of farms in the country, the Pacific states have 6 per cent of the farm tractors and 11 per cent of the farm trucks. We expect the trend to continue through the next few years because farm income is high.

### Domestic Heating

The number of oil heating installations in the West and Northwest has been breaking records since the war. On V-J Day there were about 230,000 distillate oil burners in use in this territory. By the end of 1946, the number had increased to nearly 300,000, a gain of 30 per cent. By the end of 1947 we expect the number to be 365,000 which means a further gain of 22 per cent in the current year, with a corresponding gain in heating oil consumption.

We are assuming that the post-war acceleration in installation of new oil burners will abate in 1948 and that the demand for heating oil will increase thereafter at a smaller rate per year.

The use of L.P.G. for cooking and



heating has increased rapidly and will continue to grow. It offers the rural and farm housewife the convenience of city gas at a price she can afford. Total sales of L.P.G. for all purposes (chiefly domestic) are currently about 22 million gallons per month compared to 19 million in 1946 and 9 million in 1941.

### Railroad Fuels

Dieselization of American railroads is proceeding at a rapid rate. More than 13 per cent of the locomotives in use west of the Mississippi River now are diesels, compared to fewer than 3 per cent in 1941. More than 90 per cent of all the new locomotives on order are diesels. While they cost a great deal more than the old steam engines, they can do as much work on one barrel of diesel fuel as a steam locomotive does on three barrels of heavy residual oil. They have an additional advantage in that they do not consume water. This is important in the arid southwest. We therefore assume a continued increase in the demand for railroad diesel fuel with an off-setting decline (three times as great) in the demand for heavy railroad fuel.

Total railroad fuel requirements vary with the general level of industrial activity and with national income. If the forecasters are right, some decline is indicated over the next few years but this should be of small proportions. The chief uncertainty in predicting railroad requirements is the unsettled condition of the merchant marine. Due to high operating costs and other factors, much of the coastwise and transcontinental freight which would normally move by water is still being carried by rail. The future should see a substantial resumption of marine shipping but this does not appear likely in the next year or so.

### Bunker Fuels

Residual bunker oil sales on the Pacific Coast are now approaching prewar quantities. Bunker oil prices at Los Angeles Harbor are lower than at most other ports and are competitive with the lowest in the world.

The ships now in operation are predominantly the American built Liberty and Victory types which are steam-propelled and burn heavy oil. Most of the diesel ships, particularly the Japanese and Scandinavian tankers, which called at Pacific ports before the war were sunk. New diesel ships are beginning to appear but their fuel demands are small compared to prewar.

Foreign trade is unbalanced at present, with two dollars worth of exports leaving Los Angeles Harbor for every dollar's worth of imports received. The physical volume of Pacific Coast exports, correcting for differences in price, is about 77 per cent above 1940, while imports are 29 per cent lower. A better balance can be expected as rehabilitation proceeds. The effect on bunker demands is likely to be upward.

### Electric Power Generation

Electric power production in the 5 western states during the first seven months of 1947 was 20 per cent higher than in 1946. With insufficient rainfall to operate hydroelectric plants at full capacity, more than twice as much power is being made from oil and gas this year to make up the deficiency. These relations are shown in Table B.

The increased demand for electric power is expected to continue for several years. Even with normal rainfall, comparatively high consumption of oil and gas will be needed. Numerous hydroelectric projects are under construction or planned. The Davis dam with an installed capacity of 225,000 K.W. should be completed by 1950. The

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Grand Coulee dam is receiving three new generators this winter to increase its capacity 50 per cent. It will still have space for nine more units. The Bonneville dam is now operating at capacity and has no room for additional units. About half the power capacity of Federal projects in the Northwest is still being used in making aluminum.

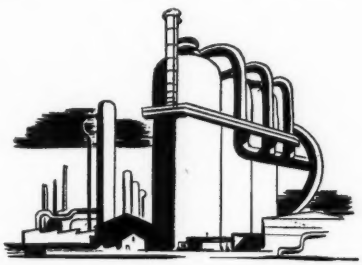
Hydroelectric generating capacity in California and Nevada will probably be 25 per cent greater in 1950 than in 1946. Steam plant capacity, including the new Redondo plant of the Edison Company and the San Joaquin Valley installations of P.G. & E. will probably be 70 per cent greater in 1950 than in 1946. This means a corresponding increase in fuel oil or gas for steam generation.

### End of a Quarter Century of Surplus

As a result of all these influences the industry is now in a normal economy for the first time in a generation. The history of petroleum is one of almost continuous surplus, broken at rare intervals by a short-lived threat of shortage. Such a threat has always stimulated exploration activity and brought a flood of new oil. It can happen again. It seems like wishful thinking, but do not rule out the possibility.

In characterizing the present as a normal economy, I mean that supply is in reasonably good balance with demand and that stocks of oil above ground are not excessive. The price of crude has increased enough to compensate for the additional cost of production. The price of products has increased far less than other commodities, thus permitting customers to satisfy their desire for automobile travel, automatic heating and many other oil benefits which they can easily afford. Employment in the industry is at record levels. Wages are good. The only thing lacking to make us feel completely at home is our usual time-honored surplus. We should learn to get along without it.

That is difficult. Nobody who has been in the oil business for less than 25 years has experienced a



normal situation before. As individual operators we must know how to plan our activities for months in advance. It doesn't take much planning if every refinery has a tank farm well stocked with surplus materials. It does take planning to run every unit at full capacity and anticipate market demands far enough in advance to keep product yields in balance. If that is not done, the marketing department will soon find it is short of some product or other. Nothing upsets a salesman more than to land an order and then find an empty tank when he tries to make delivery.

### There Is No Oil Shortage

"But," you say, "isn't there a shortage of oil? We saw it in the headlines only a few weeks ago." I repeat, there is no real shortage of oil and there has not been a shortage of oil in California. There is no real shortage worldwide. The total supply is adequate to meet the total current demand although sometimes there is difficulty in moving the oil to the place where it is wanted. Even that kind of temporary shortage has not occurred here.

Two facts alone are sufficient to prove this point. First, total stocks of crude and products are about 91 million barrels compared to 88 million at the beginning of the year. Present stocks are 20 million barrels higher than at the end of the homeward-bound troop rush in March, 1946. At that time the industry had 75 days' supply including its working stocks. It now has 95 days'. The fuel oil inventory is now 22 million barrels compared to 15 million on March 31, 1946 and 20 million on March 31, 1947. These dates mark the end of the winter heating season when fuel oil stocks are at their seasonal low point.

The second proof is in the fact that during the first half of 1947 California exported an average of 81,000 barrels per day. I submit that when stocks are increasing and as much as 8 per cent of our total supply is moving offshore, there is no real shortage.

What then caused the newspaper headlines? Most of the reports came from governmental agencies. Some were military, others were civilian, including at least one municipal agency. Practically every report followed an occasion where some agency was unable to obtain coverage under purchasing methods established by their own regulations or affected by circumstances other than oil supply. For example, the Army and Navy and most other Federal agencies cannot make contracts to purchase supplies beyond the end of their fiscal year. They must wait for new appropriations from Congress at the beginning of each new fiscal year. Immediately after July 1 they come into the market and want to purchase a whole year's supply in a matter of a few weeks. Because the seller has a hard time shifting gears this fast, there is a great deal of drum beating and flag waving for a time and then we find that one way or another the military requirements are met.

Military requirements are the most uncertain items in any forecast. This is understandable. The Army and Navy can buy in any area, have worldwide transport facilities and have the ability to store large quantities. At the end of hostilities they stopped buying some

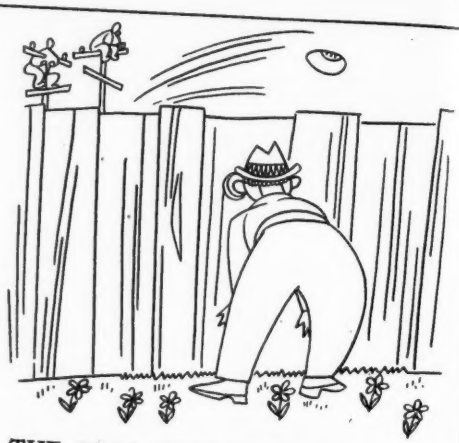
**TABLE B**

**PRODUCTION OF ELECTRIC ENERGY**
**By Public Utility Power Plants in**
**Five Pacific Coast States, 1947 vs. 1946**

Source: Federal Power Commission

| | 1947—7 months | | 1946—7 months | | Percentage Increase 1947 vs. 1946 |
|---|---|---|---|---|---|
| | Million K.W.H. | Per Cent of Total | Million K.W.H. | Per Cent of Total | |
| Hydroelectric | 19,128 | 80% | 17,653 | 89% | 8% |
| Steam (Oil & Gas) | 4,772 | 20 | 2,283 | 11 | 109 |
| TOTAL | 23,900 | 100 | 19,936 | 100 | 20 |

THE GEE FORMATION Usually pronounced, "GEE!" Somewhat impractical because it confuses *both* teams. Few coaches favor the "G" formation—on the football field, that is.



THE *FREE* FORMATION Not to be confused with the TEE formation. This formation is especially good offensively. It is particularly offensive to the stadium management and college or team treasurers.

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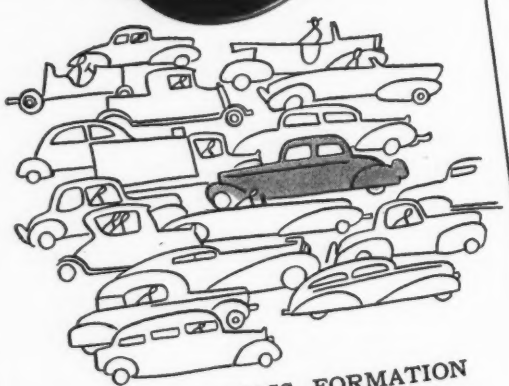
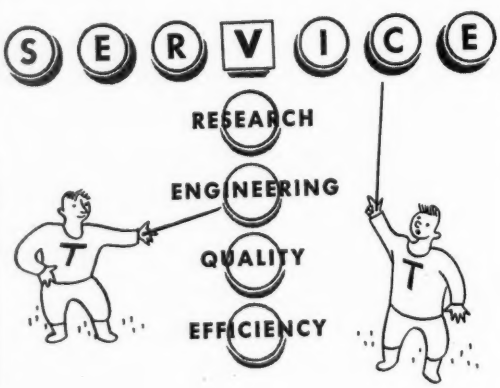


THE "M" or MASS FORMATION Seldom used by football teams of today. However, the fans still use it and it can be seen in the vicinity of nearly any large stadium on Saturday afternoon. It is, however, simply referred to as "a———— mess."

TB 47-K




Now here is our version of the "T," Formation Tretolite, that is. For licking dehydrating problems, you can't put your money on a better system, you can't back a better team. Let them tackle your next dehydrating problem.

fuels entirely and drew on their own stocks. We as taxpayers have no quarrel with this. Further, since it would not be prudent for the military to make public either its operations program or its storage position, an industry forecaster has no factual basis from which to compute military predictions in advance. Military demands change suddenly and unpredictably. Time is required to work out the answers. The situation will probably improve now that central advisory committees of oil men are being organized to work with the Army and Navy Supply Board.

There were some other shortage stories which emanated from a large municipal power department. It advertised for bids to purchase a sizable quantity of fuel oil and received no answer. I don't know why. I do know that the methods of purchasing which were effective in a buyers' market may fail to get results in a sellers' market or in a time like the present. There wasn't any shortage of oil. There was a shortage of bids. Their purchasing department quickly became aware of the changed situation, began making calls and negotiating with oil companies and in a little while the city's requirements were covered for a safe period. The electric toasters are still able to burn the toast every morning.

### Inventories

Table C shows the recent trend of Pacific Coast inventories compared to prewar in terms of total barrels and days' supply. We have already seen that inventories have been rising since the war.

In our opinion the minimum stock levels for good economic operation is about 100 days' supply. This corresponds very roughly to 100 million barrels at the present rate of consumption. The quantity will vary with the demand. In the correspondingly tight situation of 1920, for example, we had 100 days' supply with only 30 million barrels.

This does not mean that if supplies were cut off, sales could continue for 100 days. Included in the 100 million are the working stocks which fill the pipe lines, the tank bottoms, the refinery units, and the vast network of transportation and distribution facilities. Such minimum working stocks are estimated at 75 to 80 million barrels. Under wartime conditions total stocks dropped a little below these figures. The difference between 75 or 80 million barrels and 100 days' requirements is needed for seasonal fluctuations and to provide some flexibility for sudden changes in demand.

### Crude Oil Production Forecast

California crude oil production reached its peak about the time of the surrenders in 1945 at 942,000 B/D. Immediately thereafter, production was cut back at the Elk Hills Naval Reserve and in other areas to about 840,000 B/D. Under the impetus of sustained demand and successive crude oil price increases it has built up steadily and is now about 920,000 B/D. If no more new wells were drilled the production from present wells would probably decline to 600,000 B/D in a little over four years. By drilling additional wells in areas now known to be oil-bearing, the decline can be offset in part. Sooner or later however the present backlog of drilling locations will be exhausted. Our industry more than any other relies on resources still to be discovered.

To forecast the rate of such discoveries is speculative and cannot be done with accuracy. We assume that discoveries and extensions will be greater in the next five years than in the past five years of wartime restrictions and material shortages. We estimate that production will continue to rise a little for a period of six to twelve months more, reaching a peak of 930,000 to 940,000 B/D some time next year.

A peak seems inevitable because the backlog of locations is being drilled up at a faster rate than new locations are being found. If no large discoveries are made to change the trend, production may decline to 800,000 B/D by the end of 1950 and 750,000 B/D by the end of 1951. In this event California must seek about 100,000 B/D in 1951 from sources not now foreseen. This does not mean a future "shortage" of any such proportions. It is a measure of the task yet to be accomplished. We are confident that the requirements will be met as they arise. A job like this will take time and a great deal of money but it will not require any magic nor any skill which the industry has not already demonstrated.

### Crude Oil Reserves

There are many conflicting conclusions regarding the crude oil reserves of California and other areas. This is a strange situation. It demonstrates a lack of understanding because there is only one set of statistical data on reserves and there

**TABLE C**

**PETROLEUM INVENTORIES, PACIFIC COAST TERRITORY**

**Stocks in Five Western States vs. Current Demand**

Source: U. S. Bureau of Mines

| Period Ending | Total Petroleum (Including Crude Oil) | | Gasoline and Naphtha Distillates | | Gas, Oil and Diesel Fuels | | Residual Fuels | |
|---|---|---|---|---|---|---|---|---|
| | Million Bbls. | Days' Supply | Million Bbls. | Days' Supply | Million Bbls. | Days' Supply | Million Bbls. | Days' Supply |
| 1920—Dec. 31 | 30.1 | 100 | | | | | | |
| 1925—Dec. 31 | 155.8 | 273 | | | | | | |
| 1932—Dec. 31 | 165.2 | 310 | | | | | | |
| 1938—Dec. 31 | 159.6 | 245 | | | | | | |
| 1945—June 30 | 72.2 | 64 | 16.3 | 41 | 9.6 | 129 | 16.7 | 32 |
| —Dec. 31 | 73.0 | 79 | 17.6 | 66 | 8.1 | 82 | 17.8 | 40 |
| 1946—March 31 | 71.1 | 76 | 17.8 | 64 | 6.9 | 55 | 15.1 | 34 |
| —June 30 | 78.4 | 91 | 17.2 | 56 | 8.8 | 104 | 19.7 | 55 |
| —Sept. 30 | 85.3 | 98 | 17.6 | 54 | 12.0 | 166 | 22.4 | 66 |
| —Dec. 31 | 88.5 | 96 | 19.2 | 63 | 12.4 | 99 | 22.4 | 61 |
| 1947—March 31 | 87.3 | 88 | 19.3 | 62 | 10.8 | 74 | 20.0 | 48 |
| —June 30 | 90.4 | 94 | 18.1 | 51 | 12.8 | 128 | 21.4 | 58 |
| —Sept. 30 (Est.) | 91.6 | 94 | 17.7 | 53 | 14.2 | 151 | 22.7 | 58 |

# IT MAKES A BIG DIFFERENCE!

**This exclusive landing shoulder makes Reed *Super Shrink-Grip* Tool Joints the safest, strongest and most easily applied or replaced tool joints on the market.**

**THE FIXED LANDING SHOULDER,** an exclusive Reed feature, makes a big difference. It makes Reed Super Shrink-Grip Tool Joints safer, stronger and easier to replace than any other type.

***FIRST,*** it serves as a gauging shoulder to make field replacement of tool joints practical. It eliminates the need for separate gauging, and assures a correctly applied tool joint.

***SECOND,*** it protects the threads from fatigue because compression is transferred through the gauging shoulder directly to the tool joint.

***THIRD,*** the landing shoulder acts as a seal to protect the threads from the washing action of the mud.

This landing shoulder, plus the shrink-grip seal, protects the threads from corrosion and assures a clean, bright, good-as-new thread for replacing either new joints on old pipe, or old joints on new drill pipe.

This landing shoulder, found ***only*** on Reed Super Shrink-Grip Tool Joints, is the ***big reason*** why operators all over the world choose Reed for lower drill string costs.

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907

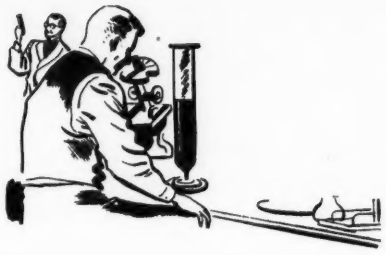
is no quarrel with the figures. Some published stories say less oil is being discovered than is currently being produced; other stories say our proved reserves are increasing each year. How can such obviously inconsistent statements be drawn from a single set of uncontested figures?

As I read the figures the estimated proved reserves of crude oil in California at the beginning of 1947 were 3.3 billion barrels. This is a little less than the 3.4 billion at the end of 1945 and a little greater than the 3.0 billion at the beginning of 1937, ten years ago. Throughout the ten-year period the reserves have fluctuated within a very narrow range with an overall tendency to increase more than to decrease.

In the ten year period 1937-1946 new discoveries and other additions to proved reserves totaled 3.0 billion, which equals the total amount existing at the start of the period. Offsetting the discoveries we find a ten year production totalling 2.7 billion. Thus there was a net increase over and above production amounting to 0.3 billion. In other words, production withdrawals amounted to nearly the entire reserve which existed at the beginning of the period and yet new discoveries and additions were sufficient to end the period with ten per cent more proved reserves than at the beginning. The facts are that additions to reserves have more than kept pace with production, even though not one major field was discovered in the entire ten years.

The figures which some writers quote to show that discoveries are lagging far behind production are fragmentary figures which result from the technical bookkeeping methods established by the committee on reserves. There is nothing wrong with the system. We need only to understand it.

The reserve figures each year show the amount added to reserves during the year in two separate items or columns. One is headed "Discoveries". This includes only the estimated reserves discovered during the current calendar year and credited at the end of that year in fields or zones which were unknown before that year. The other item or column is headed "Extensions and



Revisions." It is really made up of two separate items. By "extensions" is meant the additional reserves credited by extending the area of fields discovered in previous years. By "revisions" is meant the change in previous estimates which has become necessary as more information concerning a field becomes known. For example, there may be only five wells in a new field at the beginning of the year. The engineers estimate the thickness, porosity, permeability and area of the pool from the well data of these five wells. By the end of the year there may be 25 wells. An entirely new estimate is made on the basis of all of the information then known. Even though the area of the field is no different, its computed volume of reserves may be more or less than the previous computation. The change is therefore entered as a revision.

It does not matter in the end whether a barrel of new reserves is listed as a discovery or as an extension or as a revision. All that really matters is the total reserve on a given date regardless of the statistical procedure by which it was obtained.

In the past ten years only 14 per cent of the additions to reserves have been listed as "discoveries." This is not surprising when we remember that such items are limited by definitions to fields discovered within the current year. Any additional discoveries in those same fields in later years are not listed as discoveries, but as extensions or revisions. The development of an oil field always requires more than one year.

If discoveries continue to be made at a rate equal to 10-15 per cent of current production and if these discoveries are followed by a normal expectation of extensions and revisions, reserves will continue to be kept in balance.

Another story may help to clarify the difference between discoveries and extensions. The amount of oil listed in the discovery column may be quite different for a field discovered in December. This is because a different amount of time would elapse before the end of the calendar year and any additions beyond the end of the year of discovery would be listed under extensions. Think for a moment of Wilmington, which our company discovered late in 1936. When the reserve estimates were made at the end of the year there was only one well on production. It would be unusual if the reserve committee credited a single well with more than 100,000 or possibly 200,000 barrels of reserves. This was probably all the oil ever listed in the discovery column for the earliest zone of the great Wilmington field. Millions of additional barrels were listed as extensions in 1937 and later. If the field had not come in until January, 1937, millions of barrels would have been credited as discoveries by the end of 1937. So you see it makes little difference in which particular column the reserves are entered. The **total** addition to reserves is the only figure which should be compared with production. People unfamiliar with these technicalities continually make the mistake of reading only the discovery column. These are the people who conclude that we are fast running out of oil because we are producing many times as fast as we are "discovering" new oil. I hope you will examine the date of Table D. See how easily such an inference can mislead the uninitiated.

### Higher Costs of Replacing Reserves

The accomplishment of the industry in maintaining its reserve position is great. We can be proud of it. However, let us not think the job is an easy one. The effort required is increasing by leaps and bounds. Although the results add up to a satisfactory total, it is **barely** satisfactory and is actually disappointing if we think of it in terms of the effort and in terms of the results of past decades.

It seems that the easy discoveries have already been made. Surface geology has discovered the continent. Geophysical methods have

# This is the 22nd Year of

# ASSOCIATED FOOTBALL SPORTCASTS

Go to the games when you can—and always fill up with *AROTANE* Premium Gasoline when you do, for top performance in *any* traffic, under *any* conditions. When you can't attend, cheer your favorite team on from radio-side. Your favorite Associated Sportcaster will "bring the game to you."

"Play Ball with

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**Remember—AROTANE makes any car a better car to drive!**

carried the search to great depths. From here on the task of finding oil will become more and more difficult and more costly.

In 1937 the cost of replacing a barrel of crude oil with a newly discovered barrel averaged 27 cents, according to Mr. Pogue of the Chase National Bank, an authority on oil finance. By 1945 the replacement cost was 72 cents. Current estimates would be still higher. But even today's costs will not deter the industry in its search for reserves so long as there is opportunity for profit. The surest way to obtain more oil is to make it worth while for somebody to hunt for it.

### Possibilities for the Immediate Future

What are the most likely ways to continue the replacement of production with new reserves? First of all, the presently known areas are under vigorous development. Even if "discoveries" should stop entirely, "extensions" would continue for some years. These normally add six additional barrels to every first-year discovery barrel. But even this would become only a bone-picking operation if there were no further exploration.

Exploration is currently proceeding at a very high rate. Mr. Colom's recent paper indicates that the number of exploration geologists in California has doubled in the past ten years.

In spite of increased costs and other difficulties which increase the risk of wildcatting, exploration will continue until we run out of places to search. This is still many years away. All of the presently known oil reserves in the United States are

contained in about 8,000 square miles of area. This is only one-half of one per cent of the continental land area. Even in California there are still places to look, although most of the area has been looked at more than once. There are undoubtedly many millions of barrels which have eluded surface geology and geophysics. Such fields as Coalinga Nose were not found and cannot be found by such methods. The constant development of new techniques for geological analysis of stratigraphic and lithologic traps is likely to ferret out more fields like this and many other smaller ones.

The present price levels are also making it possible to repair old wells and to extend the margins of various old fields where the production is small but still able to pay out. We must remember that the "edge" of an oil field is not necessarily a margin beyond which there is no oil. It is the margin beyond which production cannot pay its way, like the margin between high-grade and low-grade ore.

### Large Backlog of Hitherto "Unrecoverable" Oil

The largest potential reserve that commands attention now is already blocked out but has never been listed as a discovery or included in the **proved** reserves in any way. I refer to the portion of the crude oil which is unrecoverable by any present methods. Most experts say only 35 per cent or so of the volume in the underground reservoir can now be considered recoverable. The reserve figures include only this portion. They do not include the other 65 per cent. For every barrel produced to date or remaining in the "proved" reserves, there are two or three barrels blocked out and lying in place, waiting only a knowledge of how to recover them. This enormous backlog of potential oil challenges the ingenuity of the engineers and chemists. Your kind of technology can be effective here, without asking the geologists to carry the whole problem for the future. It is just as effective to find new reserves by increasing the percentage recovery in old reservoirs as it is to find new oil. In fact, it is more effective, because better recovery will also increase the reserves which become available by discovering new pools.

The trend in this direction is encouraging, particularly in California. There is a rapidly increasing realization out here of the importance of unit operations and pressure maintenance programs.

The heart of such programs is the

**TABLE D**

**ESTIMATED CRUDE OIL RESERVES—CALIFORNIA**

**Condensate Included through 1945. Shown Separately in 1946**

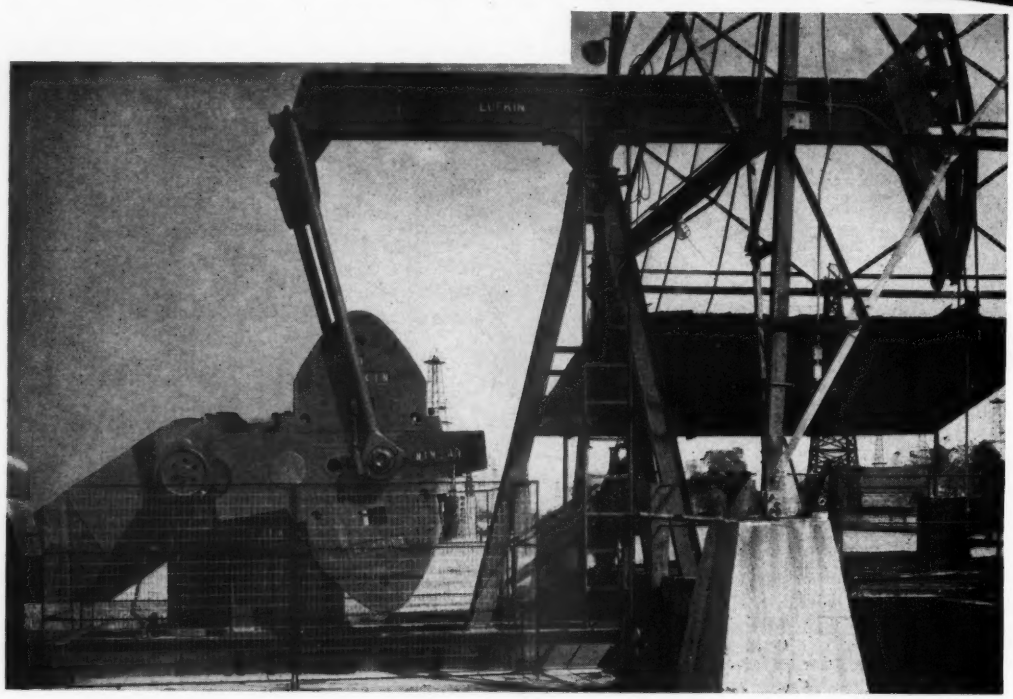
**Million Barrels—42 gallons**

Source: A.P.I.

| | Estimated Proved Reserves January 1st | Discoveries Of New Pools This Year | Extensions and Revisions This Year | Total Additions To Proved Reserves This Year Cols. 2 & 3 | Production This Year (U.S.B.M.) | Estimated Proved Reserves December 31 |
|---|---|---|---|---|---|---|
| 1937 | 2,956 | 51 | 295 | 346 | 239 | 3,063 |
| 1938 | 3,063 | 135 | 240 | 375 | 250 | 3,189 |
| 1939 | 3,189 | 47 | 521 | 568 | 224 | 3,532 |
| 1940 | 3,532 | | (17) | (17) | 224 | 3,291 |
| 1941 | 3,291 | 19 | 243 | 262 | 230 | 3,323 |
| 1942 | 3,323 | 5 | 116 | 121 | 248 | 3,196 |
| 1943 | 3,196 | 16 | 409 | 425 | 284 | 3,337 |
| 1944 | 3,337 | 77 | 243 | 320 | 312 | 3,345 |
| 1945 | 3,345 | 63 | 329 | 392 | 327 | 3,410 |
| 1946 Crude Oil | 3,318 | 14 | 277 | 291 | 315 | 3,294 |
| 1946 Condensate | 92 | .. | (50) | (50) | 2 | 40 |
| 1946 Total 1946 | 3,410 | 14 | 227 | 241 | 317 | 3,334 |
| Ten Years 1937-46 | 2,956 | 427 (14%) | 2,606 (86%) | 3,033 (100%) | 2,655 | 3,334 |

# Surface Simplicity *Plus* Sucker Rod Success

## *with*...Lufkin Longstroker



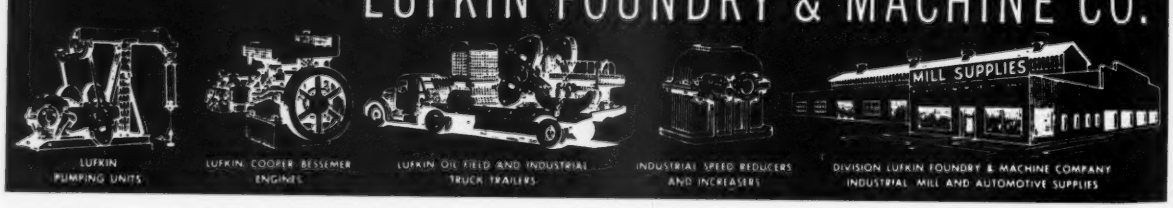
Lufkin TC-01-61 Unit Assembly

**Lufkin Long Stroke Units were engineered and built expressly to:**

1. **Handle extremely large volumes of fluid from nominal depths.**
2. **Handle moderate fluid volume from extreme depths.**
3. **Reduce peak loading and minimize sucker rod failures.**
4. **Increase pump volumetric efficiency when handling gassy fluid.**

**Lufkin**

## LUFKIN FOUNDRY & MACHINE CO.




LUFKIN PUMPING UNITS | LUFKIN COOPER BESSEMER ENGINES | LUFKIN OIL FIELD AND INDUSTRIAL TRUCK TRAILERS | INDUSTRIAL SPEED REDUCERS AND INCREASERS | DIVISION LUFKIN FOUNDRY & MACHINE COMPANY INDUSTRIAL MILL AND AUTOMOTIVE SUPPLIES

**5959 SOUTH ALAMEDA ST., LOS ANGELES 1, CALIFORNIA**

proper utilization of natural gas for reservoir control to obtain maximum ultimate recovery of total energy in all forms.

The primary function of natural gas is to produce as much **liquid** petroleum as possible. It should not be used for any other purpose until it has accomplished this purpose fully.

The use of gas for repressuring and recycling does not **consume** gas. It **conserves** gas and increases the ultimate hydrocarbon recovery from the reservoir.

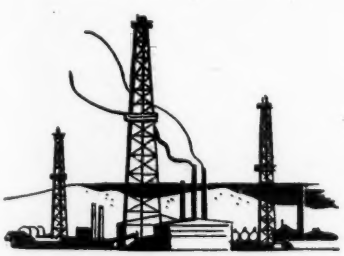
Other methods, all grouped under the term "secondary recovery" have also been under increasingly vigorous development in the past decade or two. Waterdrive and chemicals are being employed in the East. Dewatering of flooded fields in Kern County has increased the oil production there by pumping very large quantities of water. This costs money, but the point is that more oil is being obtained from fields that were pretty well depleted by earlier methods.

Methods which remain for the more distant future include mining, horizontal drilling, and even the use of bacteria.

Secondary recovery methods are likely to require legislation to apportion the benefits and the costs fairly and to prevent some selfish operator from participating in the benefits without sharing the burdens.

Since oil and gas are irreplaceable resources, we cannot count on using them forever. What kind of a transition is likely to occur as current supplies dwindle below current needs?

There is no likelihood of a dying-off process whereby the petroleum industry will be replaced by some competing industry which finally will become supreme. Our true relationship to the industry of the future foretells quite another trend.



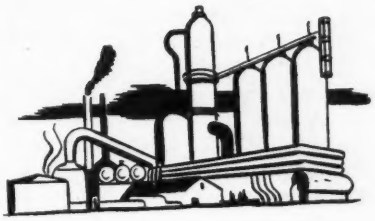
The present liquid fuel industry has long since ceased to be a servant of crude oil, existing only for the utilization of one kind of natural resource. It is rather the servant of the machines which consume the fuels. We are manufacturers of liquid fuels, not merely "refiners" of crude oil and natural gasoline. We shall make the kind of fuels needed for the engines of the future and in the quantity needed without much regard to the source or nature of the raw material. Assuming free competition between materials, we shall use the cheapest material that will accomplish the job. The economics of the marketplace will dictate the course of the future just as it has in the past.

The processes of the future are almost certain to remain in the hands of our own chemical engineers and their successors. The greatest resource of the American fuel industries is their engineering and technical skills. Even the technical knowledge of today is sufficient, without any more developments, to provide our energy needs for many generations with materials already blocked out.

But research has not stopped. In fact, the magnitude of the research investment is the most convincing proof that oil technology will not be superseded by coal. The petroleum industry spends 40 cents per ton of its product for research, excluding exploration research. The coal industry is reported to be spending 0.4 cents per ton. Which is likely to have the greatest reserve of technology ten years hence?

Long before petroleum is exhausted, it will be supplemented by liquid fuels from other source materials. Oil will be produced much longer than the ten or twelve years computed from present reserves divided by current demand, but substitution from other sources is likely to begin in some areas before that period is up.

What is to be the next source? The present lineup seems to be natural gas, coal, and oil shale, in that order. Natural gas is soon to be liquefied on a commercial scale in the Mid-Continent and Gulf areas.



This is not applicable in California because we are about to import gas itself. We have no surplus available. Next in line, coal is the most favored by Eastern engineers. Processes developed in Europe and improved in the United States since the war offer to supplement petroleum in the near future at costs which are not prohibitive although they are not competitive. Many problems are yet to be solved before we enter upon the thousand-year period of coal technology assured by present coal reserves. Oil shale is of little current interest here. It is however providing fuel in Scotland and Sweden.

There isn't much comfort for California fuel manufacturers in a future dependent on coal. There are no important reserves of coal in this state, although there are some small deposits which have been produced for many years in the past. There are larger deposits of low-grade coal in the Northwest. To find really important deposits we must look to Utah and other Rocky Mountain areas or to imports. There isn't likely to be any payout for liquid fuel made from coal imported into California. The coal processing plants should be located at the coal mine and the products moved by pipe line. Best of all would be a successful method of burning the coal in place by injecting oxygen under control, thus manufacturing carbon monoxide or water gas which could be enriched and piped to industrial areas. All such attempts have failed so far because the heating value of the gas obtained was too low.

### Imports

If we must expect to import some of our energy in the future, we may as well stick to oil and gas. This appears more feasible, anticipating that supplies can be drawn in the future from the Rocky Mountain

area, still comparatively untested, from West Texas, or from foreign fields which have been developed by American companies. The present surplus areas for crude oil include West Texas, the Caribbean, and the Middle East. Oil from any of these areas could be brought to California without prohibitive cost. Any of these movements would require large amounts of capital and would not be attempted on a fly-by-night basis. Since local producers would already be selling all their oil, they would not be harmed. We do not foresee now that any such importation is likely to be needed before 1951, and many things can happen to improve our local situation before then. The only point to remember is that importation is not likely to begin before it is needed, and then it will have no bad effects.

### Summary

The pyramiding effects of the war, population growth, greatly increased per capita consumption of energy, and limited rainfall have carried the Pacific Coast petroleum industry out of its surplus era into a normal economy for the first time in a generation. There is no real oil shortage here and none is in sight. Rumors to the contrary arise from purchasers who are not aware of the shift from a buyers' to a sellers' market. Oil is not overly plentiful, however, and careful planning is needed to avoid local dislocations and to provide military requirements.

Petroleum inventories have increased substantially since the war but are still below the minimum economic level of 100 days recommended. Exports in the first half of 1947 were 81,000 B/D or about 8 per cent of the total supply. Crude oil reserves have been maintained at levels sufficient to balance withdrawals for the past ten years although not one major field has been discovered in that time. Reserves are likely to be ample for many years to come.

Crude oil production is expected to increase from the present 920,000 B/D rate to a peak of 930-940,000 B/D some time in 1948. Thereafter it is likely to decline because the present backlog of locations is being drilled up faster than new locations are being discovered. By 1951 we shall need 100,000 B/D more than the production rate which can now be foreseen.

Future possibilities which may appear include the discovery of many elusive fields of the Coalinga Nose type, unresponsive to geophysics and surface geology; better recovery methods from old fields; imports; and finally, partial substitution of other source materials. No need for crude oil imports is now foreseen before 1951. The circumstances under which they would become necessary are not likely to harm California producers.

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## Earlimart Test Deep

The future at this writing does not appear too rosy for Pacific Western's Brunner No. B-1 in Sec. 16-24s-25e in the Earlimart area of Tulare County. Present depth is 7462 ft. with showings of consequence still absent.

## Elsmere Try Rigs

Nelson-Phillips Oil Co. is rigging derrick for its Kraft No. 1 wildcat in Sec. 31-4n-15w in the Elsmere area, Los Angeles County.

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## Los Angeles Tests Drill

Richfield Oil's L. A. River Community No. 1-1 in Sec. 34-1s-13w in the East Los Angeles area is drilling at 1960 ft. U. S. Rubber No. 1 in Sec. 16-2s-12w is going deeper at 6311 ft.

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## Lawndale Test Idle

Operations have been suspended at 8048 ft. in Seaboard Oil's Johnson No. 2 in Sec. 17-3s-14w in the Lawndale area. Pauley-Seaboard No. 51-20 in Sec. 20 is making hole at 4908 ft.

"Rush out and hire 5000 people to investigate the oil shortage, Beadsley. It'll look good in the newspapers and put us in another pay-bracket."

# Abstracts of Papers Delivered at the Annual Coast Meeting of AAPG, SEG and SEPM

**THE NATURE OF THE BASEMENT COMPLEX OIL RESERVOIR, EDISON OIL FIELD, CALIFORNIA**
**J. C. May and R. L. Hewitt, Tide Water Associated Oil Company, Bakersfield, California.**

The completion of the H. H. Magee and Independent Exploraton Company "Brockman" No. 3 well, Sec. 13-T30S/R29E, MDB&M, in the Edison field, Kern County, initiated commercial production from basement complex rocks in the San Joaquin Valley. At the present time about 1500 acres of these rocks are oil productive in this field. The geologic structure of the field at basement complex depths is a faulted, dome-like fold with extensive south and west flanks, but with the north and east flanks shortened by faulting. The basement complex rocks are divisible into two groups; metamorphic rocks derived from sediments and igneous intrusives, and a younger igneous rock (Sierra Nevada) which was the chief cause of metamorphism in the older rocks. The metamorphic rocks in order of their probable age are (1) McCowan schist, (2) Hershey schist, (3) Dougherty schist, and (4) Felsites. The McCowan schists are satiny, lead-gray, laminar rocks of sedimentary origin which occupy the eastern part of the field. The Hershey schists of doubtful sedimentary origin, are pistachio green, poorly laminated rocks. The Dougherty schists are variously metamorphosed fine-grained igneous rocks of probable malchite or diorite aplite composition which comprise the west half of the basement producing area. The felsites are fresh, fine-grained igneous rocks, mineralogically akin to the Dougherty schists, which occur as segregations throughout the field. The quartz diorite of the Sierra Nevada batholith bounds the east edge of the oil field. Metamorphism is regional, characteristic of the epizone, and its effects increase as the quartz diorite is approached. The oil originated in the westerly extending Tertiary sedimentary basin and migrated into the pore and fracture spaces of the structurally higher schist. Its accummulation apparently is unaffected by the type of schist, but is governed by the degree of metamorphism, fracturing, and control of several large faults.

**EXAMPLES OF ELECTRICAL LOGS IN FRACTURED ROCKS**
**R. D. Ford, Schlumberger Well Surveying Corporation, Long Beach, California, and Milton E. Loy, Bakersfield, California.**

A discussion of electrical logs in fractured rocks was of interest in this symposium because, to the geologist and engineer, not only does a fractured rock reservoir require a different interpretive technique, so also does the electric log. Inasmuch as the electrical characteristics of basement rocks, fractured shales, and cherts may all be similar, they referred to all as fractured rocks.

Martin W. Van Couvering

Wm. P. Winham

Slides were shown illustrating the following areas:

Santa Maria cherts
Edison schist
Maricopa shales
Elk Hills chert and shales
Newport Beach — fractured shales
Wilmington schist

These illustrations showed that there is apparently very little correlation between resistivity and production. This apparent lack of correlation may be attributed to the fact that the physical characteristics controlling resistivity are not necessarily the same as those which control production.

**SUMMARY OF GEOLOGY AND EXPLORATION IN SACRAMENTO VALLEY**

**W. E. McKitrick, Shell Oil Company, Sacramento, California.**

Summarized the stratigraphy and structure of the gas fields in the Sacramento Valley, with a summary of statistics on distribution and results of exploration. Slides showed location of fields, selected type logs to illustrate stratigraphy and seven regional geologic sections.

←

**1st Row left to right: Paul Pustmueller, J. Jakosky, Harry R. Johnson, Martin Van Couvering, Bill Beaty.**

**2nd Row left to right: Geo. MacReady, Aden Hughes, C. E. Leach, J. C. Kimbals-Back, Stan Whistler, Ralph Arnold, E. De Golyer.**

**3rd Row left to right: Dr. Ward Smith, D. Howitt, J. Herrenschmidt, Marcel Orgeval, Maurice Mainguy.**

←

**SUMMARY OF GEOLOGY AND EXPLORATION IN SALINAS VALLEY**

**J. E. Kilkenny, Chanslor-Canfield Midway Oil Company, Los Angeles, California.**

Intermittent unsuccessful exploration for oil has been carried on in the Salinas Valley for the past 50 years. A favorable sedimentary section of both source and reservoir beds has prompted a periodic renewal of wildcat drilling, the most recent of which was undertaken in 1946 and is still in progress. The general stratigraphy and structure of the basin was reviewed and some exploration statistics presented. Recent wells drilled have shown that the Vaqueros sand is less extensive than originally thought. In addition, new light has been thrown on the King City fault revealing two periods and types of movement and indicating that B. L. Clark's fault block theory of the origin of present day structural features may be valid in this particular area.

**OIL AND GAS PROSPECTS OF WASHINGTON AND OREGON**

**Hampton Smith, Consulting Geologist, Los Angeles, California.**

After many years of nearly complete quiescence, scientific prospecting for oil and gas in Washington and Oregon entered a period of accelerated activity during the war, which activity will probably continue for several years.

The area of interest included several non-contiguous districts in a region 400 miles long and 100 miles wide, covering most of Western Washington and Oregon. A number of operators have carried out extensive projects of surface mapping and seismograph work in one or more of these districts and over 15 wildcat wells were drilled or are drilling. No commercial production has been developed but some encouraging showings of oil and gas have been reported and a great deal of new geological information has been obtained.

A brief outline of the geology of Western Washington and Oregon was presented and an attempt made to evaluate the prospects of this territory in light of the data obtained in the current exploration cycle.

**RELATIVE COST OF FINDING OIL IN CALIFORNIA**

**Graham B. Moody, Standard Oil Company, San Francisco, California.**

Statistics indicate that the cost of finding oil in California is not by any means a fixed quantity but fluctuates between wide limits. The variables that affect finding costs were discussed.

**PROSPECTING FOR PETROLEUM**

**E. DeGolyer, Distinguished Lecturer of American Association of Petroleum Geologists, Dallas, Texas.**

Dr. DeGolyer critically examined the theories of oil occurrences from the time of announcement of the anticlinal theory to the present. The outlook for prospecting in the United States was discussed and the effectiveness of current exploration procedures were considered on a quantitative basis.

**CORRELATION IN CALIFORNIA**

**John Sloat, Union Oil Company, Bakersfield, California.**

In this opening paper the fundamental problem of cause and effect of seismic reflections were briefly discussed. An attempt was made to define record character and the factors which affect character correlation. The question of the recognition of geologic members from seismic records, and correlation of these members is considered. It was argued that several known beds can be identified and correlated over considerable area. The question of recognition of the Basement reflection was discussed in detail, with records showing the appearance of this member at numerous points where the Basement has been cored and where adequate velocity control is available.

**SIGNIFICANCE OF THE "A" REFLECTION OF FRESNO AND MADERA COUNTIES, CALIFORNIA.**

**Loring V. Snedden, The Texas Company, Bakersfield, California.**

A reflection has been obtained extending over a large area in the northern San Joaquin Valley. Because of its unknown origin when first observed, it was designated the "A" reflection. Subsequent work has demonstrated that this reflection originates from a conglomerate bed in the Cretaceous. Due to its widespread areal extent and the reliability with which it may be traced, this reflection makes possible a correlation of widely scattered Cretaceous sections which otherwise would be difficult to correlate.

**COMPLICATIONS IN BASEMENT REFLECTION CORRELATION**

**W. D. Cortright, Tide Water Associated Oil Company, Bakersfield, California.**

this ONE feature gives you FIVE advantages...

# and SPANG EXTREME LINE CASING has *seven OTHER features

At all depths, shallow, medium and especially in modern deep wells, Spang Extreme Line Casing has been used with outstanding success.

The biggest part of this exceptional performance is due to the specially designed joint.

Just one of its features, a *streamlined exterior contour*, gives you five advantages:

1. No shoulders to catch on or hang-up on projections.
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The purpose of this paper was to show by illustration how the top of Basement reflection character correlation may be misleading, and to suggest some geologic conditions which may have a bearing on the situation. Local migration vertically of the typical Basement reflection, although a disturbing factor, does not prevent the extended use of this reflection band as a basis for mapping the basement configuration.

### CORRELATION POSSIBILITIES IN THE SACRAMENTO VALLEY

**Kenneth S. Cohick, Shell Oil Company, Inc., Sacramento, California.**

Exhibited seismograms showed probable reflection correlation over a rather ideal correlation area in the Sacramento Valley. Attempts to extend the correlation beyond this area were discussed.

### EXAMPLES OF SEISMIC SECTIONS ACROSS KNOWN FAULTS

**O. F. Van Beveren and M. G. Smith, Standard Oil Company of California, Bakersfield, California.**

Several suites of seismograph records and cross-sections across known faults were presented. Seismic data sometimes do and sometimes do not reveal the faulting.

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**Pictures on Page 25**

**1st Row left to right: W. E. Kennett, J. C. Crowell, Thos. C. Bannan, R. M. Klempell, Russell Semonson.**

**2nd Row left to right, Standing: Wm. Lewis, C. W. Johnson, Wm. W. Porter; Seated: H. W. Hoots, Harvey Lee, C. M. Johnson, Wiley Price, R. W. Woods; Insert: Milton W. Lewis.**

**3rd Row left to right, Standing: Pat Kelly, Ralph McCallom, Lawrence Vanderleck, R. G. Wheaton, Hugh McClellan, P. H. Gardett; Seated: A. T. Lee, J. C. Kimball, E. C. Edwards.**

---

### STRATEGIC CORRELATION vs. MULTIPLE REFLECTIONS

**Cecil E. Reel, Superior Oil Company, Los Angeles, California.**

In the San Joaquin Valley an example was shown where no deep structure is indicated by the correlation on the deep beds. However, in this area there is a good reversal in the upper beds. Multiple reflections from the reversing shallow beds could be misleading and cause a misinterpretation in the deep zone.

### NOTES ON THE MIGRATION OF STEEP DIPS WITH SPECIAL REFERENCE TO CURVED PATHS

**E. J. Handley, Century Geophysical Corporation, Tulsa, Oklahoma.**

Computing procedures were outlined to be followed in areas of steep dips. Some practical procedures were suggested to be used in areas of steep dips where a linear increase of "instantaneous" or true velocity with depth holds to an acceptable approximation.

### CORRELATION OF REFLECTIONS WITH ELECTRICAL AND GEOLOGICAL LOGS

**C. Hewitt Dix, United Geophysical Company, Pasadena, California.**

By examining the pulse shapes on well velocity records in a case where the transients were particularly short and well defined, an average pulse shape was established. Using the electrical log and the geological log, major contacts were established. From the well's interval velocity results it was decided whether the velocity increased or decreased with increasing depth at the main sharp contacts. Using the well's time-depth data, the average pulse-shape, the depths of contacts, and assigning direct (positive) character to the pulse when the velocity increases downwards and inverted (negative) character when the velocity decreases downwards, a synthetic record was made. This synthetic record shows a remarkable resemblance to near-by records actually shot. The timing is essentially correct and the reflections are correctly identified as positive and negative on the synthetic record. Inspection of the average pulse showed in this case, a direct first part, followed by a second part which was reflected from the ground surface.

Since every reflection on the present synthetic record, (and on the actual records) appears as a doublet, only the first parts are to be correlated simply and directly with geological contacts. This is also true of the basement, the second part of the basement doublet plotting well below the basement top.

The bearing of these matters on the problem of correlating from record to record to quite evident since the term "character" was made to refer to a really characteristic shape in the pulse.

### GEOPHYSICAL HISTORY OF THE WILMINGTON OIL FIELD, LOS ANGELES BASIN, CALIFORNIA

**N. R. Shade, General Petroleum Corporation, Los Angeles, California.**

This paper, with maps, described the 1936 seismograph survey and results obtained over Wilmington Oil Field prior to the discovery of oil by drilling. A map made from data obtained by drilling in the development of the field was shown for comparison. There was very good agreement between the 1936 seismograph map and the 1946 map made from well data. The field methods and the methods of presentation of data are described, and examples of seismic records and sections were shown.

### CASE HISTORY OF McDONALD ISLAND

**Phil P. Gaby and A. J. Solari, Standard Oil Company of California, San Francisco, California.**

The discovery well at McDonald Island was located on the basis of a reflection seismograph survey made in the Fall of 1935, extending through January, 1936. The "lead" was picked up by a routine reconnaisance seismograph program. The area, situated in the Sacramento River delta, has a surface cover of silt, peat and decayed vegetation. Geophysical problems peculiar to that type of region were discussed, and the use of buried detectors was also briefly mentioned. The seismograph contour map, as prepared prior to drilling of the discovery well, was shown and compared to present contour maps based on well correlation. Probable causes for the differences between these two maps were discussed.

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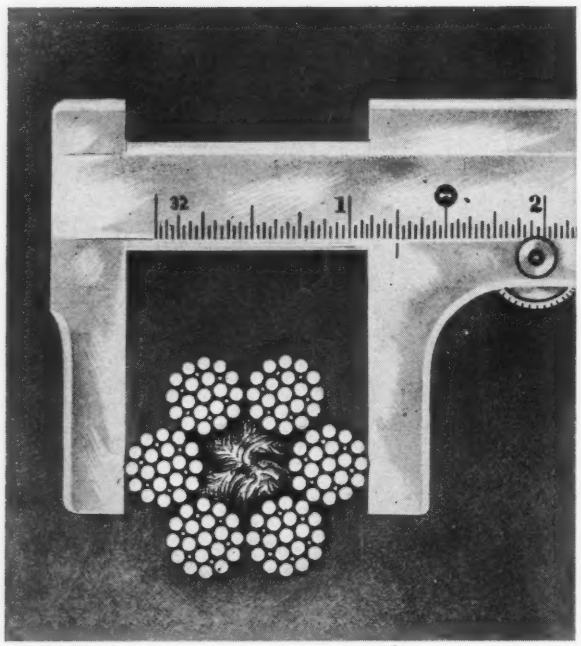


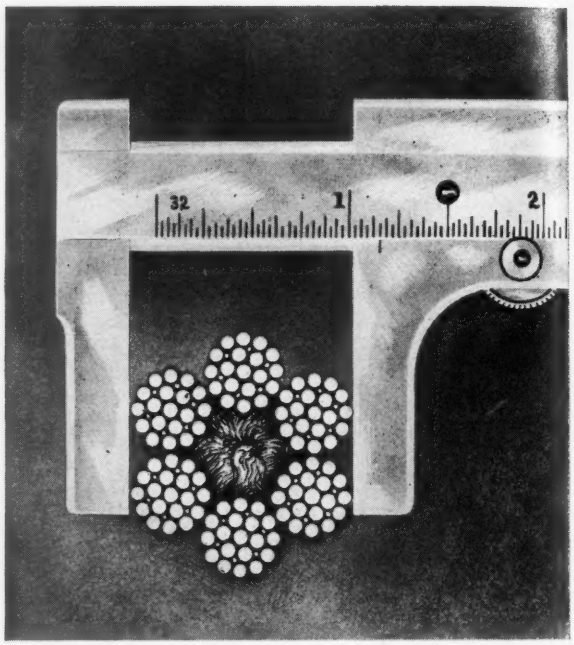


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### ON THE PENETRATION OF ALTERNATING ELECTRICAL CURRENTS INTO THE GROUND

**G. Potapenko, California Institute of Technology, Pasadena, California.**

The theory of penetration of an alternating electric current into the ground is relatively simple if limited to the case of two horizontal beds, provided the spread between the current carrying electrodes is much larger than the depth to the boundary plane between the beds. In this simple case the penetration depends mainly upon the frequency of current $v$, and upon the ratio of the resistivity $p$ of the lower bed to the resistivity $p_o$ of the upper bed.

Using the data available, a diagram was constructed which indicates for each $v$ and each $(p-p_o)/(p+p_o)$ the two critical depth values: $D_m$ and $D_n$ ($D_m<D_n$), defined as follows. When the depth $h$ to the boundary plane is smaller than $D_m$, the skin-effect is negligible, the lower bed can be easily detected, and $h$ can be accurately determined. When $D_m<h<D_n$, the lower bed can be detected but $h$ cannot at present be determined accurately due to shortcomings of the theory. Finally, when $h>D_n$, the skin-effect is so large that the lower bed cannot be detected, $D_n$ may, therefore, be taken as measure of the depth of penetration, i.e. the maxmum depth attainable in resistivity prospecting. $D_m$, on the other hand, must be used at present in place of $D_n$ when quantitative interpreting is needed. In the case of many horizontal layers, one of which may be chosen as a marker bed, the depth of penetration may be estimated by considering the layers above the marker as a single layer of an equivalent resistivity $p'$. This $p'$ may be approximately calculated using a formula suggested by Hummel for the case of electric sounding.

### AN IMPROVED METHOD OF LAND SURVEYING FOR USE IN BRUSH COVERED AREAS

**Kenneth H. Waters, National Geophysical Co., Inc., Dallas, Texas.**

A method was presented by which surveying in brush covered areas can be conducted above the tops of the trees, thus eliminating costly brush cutting. The technique and equipment were described for making the traverse across such country.

### WELL VELOCITY SHOOTING IN CALIFORNIA

**Robert J. Wells, Richfield Oil Corporation, Bakersfield, California.**

Well velocity shooting stands as probably the most direct way of getting seismic velocity information at the present time. Sources of error and approximate magnitudes of errors were summarized, and the disturbing and misleading effects of impulses transmitted down the well geophone cable were discussed in detail. Several examples of the latter phenomenon in California were shown, and analyses were made indicating the probable path the energy travels from the shot to the cable, and thence down the cable to the geophone. The attenuation and velocity of the wave down the cable were evaluated, and the effect of cable transmitted energy in using multiple geophones on the same cable was discussed. The paper concluded with a rough evaluation of accuracy requirements for usable well velocity data, and suggested refinements in techniques to achieve these accuracies, and in particular, to eliminate or reduce the uncertainties introduced by cable-borne energy.

### NOTE ON SHOOTING IN A WELL TO DETERMINE VELOCITY

**Robert Dyk, General Petroleum Corporation, Bakersfield, California.**

An example of a velocity survey was shown where explosive charges were placed in the well being surveyed, and the energy received by surface geophones was recorded. The field procedure was described and the advantages of this method over the conventional technique were discussed.

### THREE DIMENSIONAL CONTROL AND CALCULATIONS IN SEISMIC DIP WORK

**E. J. Handley, Century Geophysical Corporation, Tulsa, Oklahoma.**

The difference between true dip components and apparent dip components were discussed, and their relationship studied as a function of the magnitude of true dip, and of the angle between the directions of the components and the true dip. For dips that are too large it was shown that dip vectors should be used as dip gradients, with lengths inversely proportional to the tangents of their respective dip angles. In this manner the lengths of the vectors become horizontal contour intervals, which is of considerable value in interpretation. A universal true dip chart was described for determining from two dip components the magnitude and direction of true dip and the length of the gradient vector.

### ECOLOGICAL RELATIONSHIPS OF RECENT FORAMINIFERA

**Dr. Earl Meyers, University of California at Berkeley.**

Dr. Meyers is a marine biologist, formerly with Scripps Institute of Oceanography and Hopkins Marine Station. He discussed the paleogeographic factors of foraminiferal ecology, including depth, distance from shore and sedimentary conditions, and attempted to apply these factors in the ecology of living foraminifera to environmental significance of fossil foraminifera.

### DETERMINATION OF POTENTIAL OIL SOURCE ROCKS

**Dr. Parker D. Trask, Division of Mines, California State Department of Natural Resources.**

Dr. Trask, formerly with the United States Geological Survey, and leader of research in the subject summarized what is known about recognition of strata as potential oil source rocks.

### SUMMARY OF PRODUCTION FROM FRACTURED ROCK RESERVOIRS IN CALIFORNIA

**W. S. Eggleston, Union Oil Company, Los Angeles, California.**

The main source of oil production in California is from sand reservoirs. In recent years, however, production from fractured rock reservoirs has entered the lime-light and has gained a certain amount of prominence. Fractured rock reservoirs can in general be divided into two groups, fractured cherts and shales in sedimentary beds and fractured meta-

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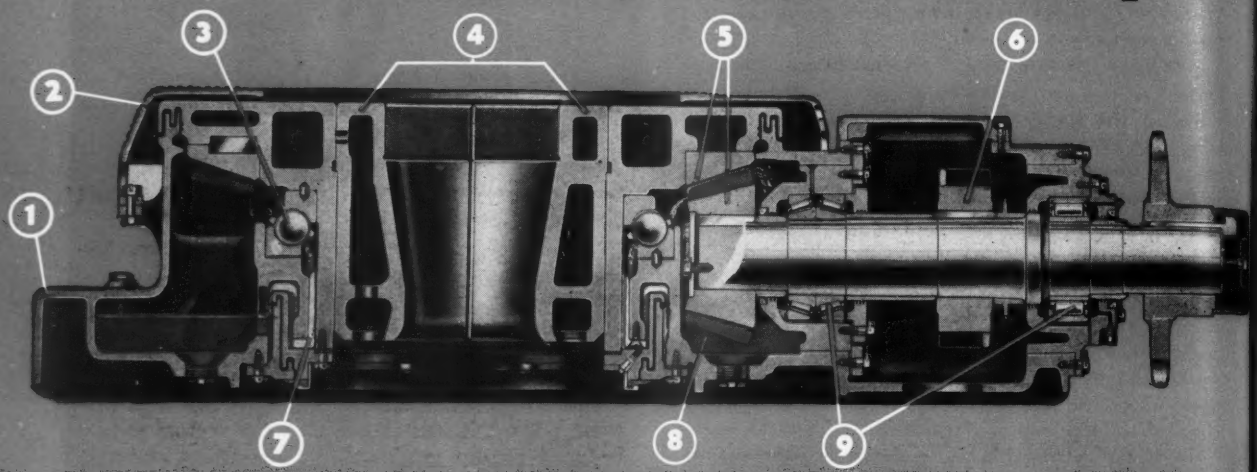


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morphosed basement rocks. Approximately 55,000 barrels of oil per day is being produced at the present time from fractured rock reservoirs. It is estimated that 15,000 barrels per day are being produced from fractured basement rocks and 40,000 barrels per day from fractured cherts and shales.

### OCCURRENCE AND ORIGIN OF CHERT IN THE MONTEREY FORMATION

**M. N. Bramlette, University of California at Los Angeles, West Los Angeles, California.**

Chert is less common than the other siliceous rocks in the Monterey but is locally prominent, especially in lower parts of the formation. Evidence was presented indicating that most of the siliceous rocks were formed through an alteration of originally diatomaceous rocks; the chert forming from beds and areas of relatively pure diatomaceous deposits. Most of this alteration by solution and recementation was after burial of the deposits.

Surface exposures commonly show recementation of the fractured cherts. More open fractures might persist, however, if accumulation of oil were nearly coincident with some of the structural deformation and fracturing.

### FRACTURED RESERVOIRS OF THE SANTA MARIA DISTRICT

**L. J. Regan, Jr., General Petroleum Corporation, Santa Maria, and A. W. Hughes, Union Oil Company, Santa Maria, California.**

Cumulative production of the Santa Maria District to January 1, 1947, was 250,637,000 barrels of which an estimated 77% originated in fractured rocks and 23% in oil sands. 74.5% of the oil was produced from fractured rocks in the Monterey formation and 2% from fractured "Knoxville" sandstone. Monterey fractured rocks in order of importance include (1) Mohnian cherts, (2) Lusian limey shale, and (3) Mohnian platey siliceous and porcellaneous shale. The distribution, age, and character of fractured zones were illustrated by stratigraphic sections. The distribution of maximum chert development suggests chert originated as a sedimentary facies. General characteristics of potentially productive fractured rocks of the district were analyzed and their permeabilities and porosities as indicated by production data were discussed.

### OIL PRODUCTION FROM FRACTURED ROCKS ON WEST SIDE SAN JOAQUIN VALLEY

**S. M. Reynolds, Consulting Geologist, Taft, California.**

There are three known areas on the west side of the San Joaquin Valley where production is obtained exclusively from fractured rocks. These are in the South Belridge, Elk Hills, and Sunset oil fields. In each accumulation the structure is anticlinal; the fractured rocks are shale of upper Miocene age. The physical characteristics of the fractured rocks are not well known generally. The upper Miocene contains considerable brittle siliceous shales on the west side of the San Joaquin Valley which are known to have favorable reservoir characteristics in some instances where tested. The distribution of these members was discussed.


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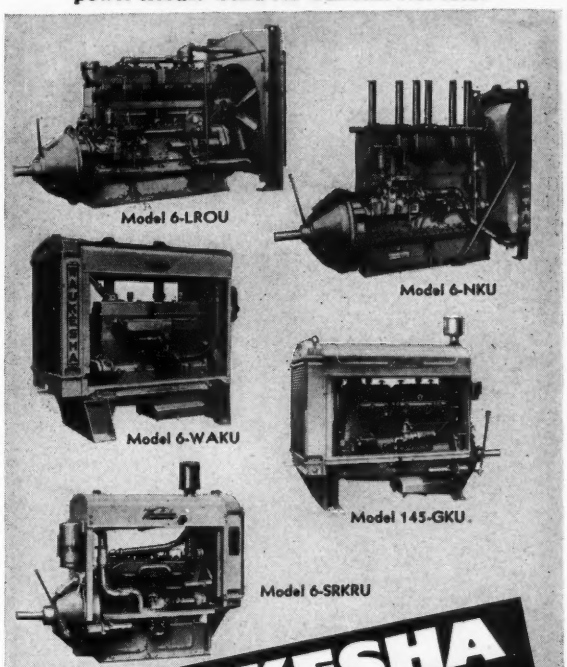


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| 145-GKU | 6 | 5¼ x 6 | 779 | 1400-1800 |
| 140-GKU | 6 | 4½ x 5½ | 525 | 1500-1800 |
| 6-SRKRU | 6 | 4⅜ x 5⅛ | 517 | 1500-2000 |
| 6-MZAU | 6 | 4¼ x 4¾ | 404 | 1600-2200 |
| 6-BZU | 6 | 4 x 4¼ | 320 | 2000-2500 |
| VIKU | 4 | 4½ x 5¼ | 334 | 1400-1600 |
| XAHU | 4 | 3⅜ x 4½ | 186 | 1800-2000 |
| FCU | 4 | 3¼ x 4 | 133 | 1800-2600 |
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# Application of the Shaped-Charge Process to Petroleum Production

ROBERT M. McLEMORE
Well Explosive, Inc., Fort Worth, Texas

The knowledge of the penetrating effect of high-explosive charges with a cavity in their forward end was first disclosed by Professor Charles E. Munroe in the 1880's. This phenomenon, known since that time as the "Munroe effect" or "the cavity effect of explosives," is created by hollowing out the end of the high-explosive charge which is facing the object to be penetrated. Upon detonation of the charge, an indentation will be made on the object—the diameter of which will be roughly equal to the diameter of the hollowed-out portion of the charge, and the depth of which will vary increasingly with the depth of the hollowed-out portion. Some practical use of this principle was made during the ensuing years but, generally speaking, the phenomen, although an interesting one, appeared to have no widespread value.

As a result of research work done in the field of high explosives, it was determined that tremendous changes could be made in the penetrative characteristics of the hollow-charge effect by inserting a metal liner into the hollowed-out portion of the explosive, and by moving the charge away from the object to be penetrated. Introduction of these two factors into the already known principles of the hollow charge resulted in a small round entrance hole in the object to be penetrated, which tapered down gradually to a relatively great depth (Fig.1 and 2). It was found that the material which comprised the liner, its size, thickness, and shape, together with the distance between the base of the liner and the target, all had a bearing on the diameter of the entrance hole into the target, the amount of its taper, and the total amount of penetration. Innumerable tests proved that a conical liner of copper or steel would effect the greatest penetration, provided the apex angle of the cone was small enough and the material thick enough to prevent its extroversion upon detonation. Liners of other materials, such as glass or aluminum, will produce holes of greater diameter and less depth. Liners of other shapes, such as hemispherical, will produce holes with different characteristics.

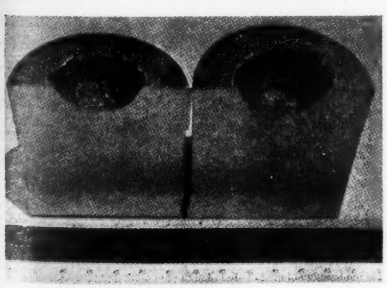

**FIG. 1**
**Penetration in Steel Target from Shaped Charge without Liner.**

Due to the extreme rapidity of the reactions involved in the detonation of the lined shaped charges, it has been difficult to determine all of the causes and effects that are a part of the phenomenon. Many high-speed X-ray photographs of the charges in the process of detonation have been taken, and from these a vast quantity of research data has been accumulated. As yet, no full explanation of the many complex physical and chemical reactions involved in this process is available to the public. The following is an approximate theoretical interpretation of the phenomenon (Fig. 3).

The detonation wave, which must be initiated from a point on the extended axis of the cone or liner, starts traveling downward toward the apex of the cone. As it reaches the apex and progresses toward the base, the cone is collapsed radially, symmetrically, and inwardly. As the walls collapse and meet along the axis of the cone, the pressure along the axis, due to the impact of the collapsing walls, is increased to a point above and beyond the pressure generated by the detonation wave. During the collapsing process the material comprising the inner layers of the liner, due to the high pressures and temperatures, has become highly plastic. Because the gases are continuing to exert pressure at the rear of the liner, the only avenue of escape for this plastic material is through the small aperture left in the forward section of the rapidly collapsing liner. Because the jet escapes the confines of the collapsing liner, emerging from the forward end of the liner in the form of a long pencil-like stream, it can be assumed that it travels at a velocity greater than the approximate 8,000 meters per second velocity of the detonation wave. Following the jet, at a much lower velocity (approximately 500 meters per second), is the "carrot"' which consists of that part of the cone or liner which has not been converted into fine particles to form the jet, and which has now collapsed into a thin elongated shape resembling the vegetables from which it derives its name. The "carrot" does not originate the hole in the object which serves as the target; it merely follows into the hole that has been made previously by the jet. To get this penetration from a lined shaped charge, and to give the forces involved sufficient time and space to form into an efficient jet, the factor known as "standoff distance" is quite important, and must be considered. This may be defined as that distance from the base of the liner to the first obstruction that the jet will strike. This standoff distance varies with the shape, material, and thickness of the liner, in order to allow the gases and metal particles to form into an efficient jet.

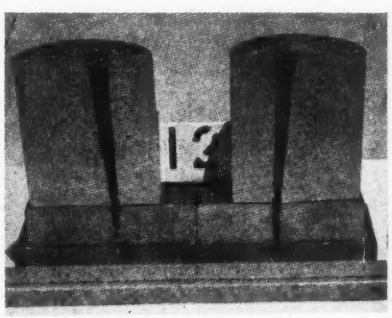

**FIG. 2**
**Penetration in Steel Target from Shaped Charge with Liner.**

The uses of these principles in projectiles, and rockets, in World War II are comparatively well-known, and are not a topic of this discussion. It is the adaptation of these principles to the production of oil and gas that is of immediate interest to us.

For the past few years an active research and development program has been conducted on the adaptation of this principle to its readily apparent uses in the production of oil and gas. The problems of developing a charge that must necessarily be small enough to go inside of well casing, of developing a means of detonating these charges in multiple with no interference from adjacent charges, of finding a vehicle to contain the charges that could be withdrawn from the hole and used again, of eliminating damage to the well casing when the charges are detonated, of finding an explosive that would be safe to handle and sure of detonation under the high temperatures that are encountered in the oil wells of today, have been met and solved successfully; so that adaptation of the lined shaped-explosive-charge principle to petroleum production, although by no means complete; is advanced to the stage where its use is an established fact. Active work has been conducted on several applications of the principle to oil and gas production, including casing perforating and open-hole blasting or formation penetration.

### Casing Perforating Process

Two sizes of charges have been developed for use in casing perforating operations at this time, both being of the "beehive" or tapered form of charge with a cross-sectional area that decreases from the base of the liner to the point of initiation (Fig. 4). Each charge is contained in a molded bakelite case, and is equipped with a steel cavity liner—the liner being placed sufficiently far back into the case to give an adequate standoff distance. The 28-g charge is designed for the perforating of 6⅝-in.-outside-diameter casing, and larger, and is fired from a carrier that is 5 in. in outside diameter. The 21-g charge is designed for the perforating of 5½-in.-OD casing, and is fired from a carrier that is 3⅝ in. in outside diameter (Fig. 5). The charges have a copper ferrule inserted through the initiating end for the threading of the detonating fuse. The 24-shot carrier is of heavy tubular design, with ports through which the jet will pass placed in it on 3-in. centers at 120-deg phasing. The charges, after having the prima-cord detonating fuse threaded through the ferrules on the initiating ends, are inserted in the carrier and securely fixed in position in alignment with their respective ports. The ports, of course, are externally sealed to exclude the well fluids and pressures. The free end of the prima-cord is brought up through the top of the carrier to the detonating sub, where it is connected to an electric blasting cap which, in turn, is connected by means of conductor cable to the surface operating truck, and which is initiated in the conventional manner. Upon detonation, the shaped-charge jet shoots through the port seal, through the well fluid, through the casing and cement, and into the formation. Inasmuch as the single length of prima-cord initiates all the charges, and the rate of detonation is approximately 22,000 ft. per sec, the detonation of all the charges is virtually simultaneous.

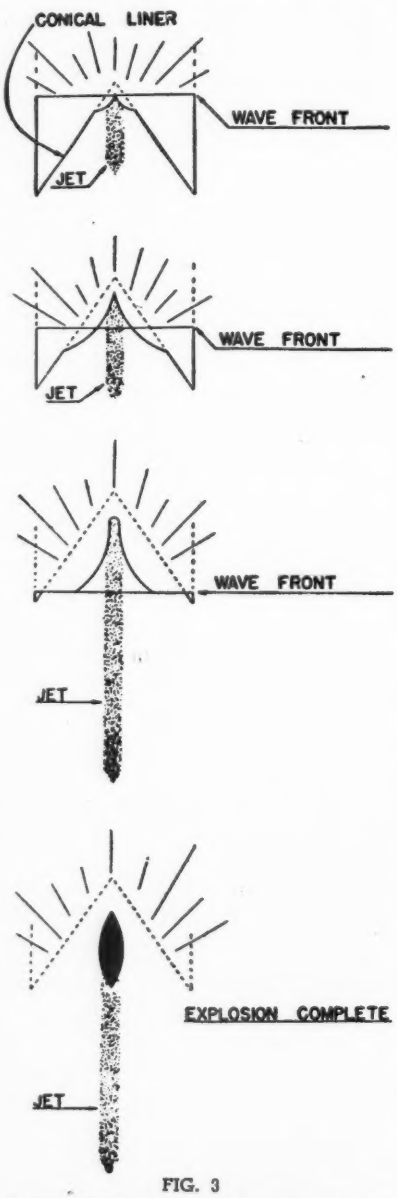


FIG. 3
Diagrammatic Sketch of Conically Lined Shaped Charges.

The 28-g charge will make a hole approximately ½ in. in diameter in the casing, and the 21-g charge will make a hole approximately ⅜ in. in diameter in the casing. These hole sizes can be made larger or smaller by varying the dimensions of the liner and the charge; but at this time, because of the production problems involved, only the two sizes are being used. Both sizes of charges have been designed to give approximately the same amount of penetration, the additional energy represented by the larger amount of explosive in the 28-g charge being expended in making the larger diameter hole. A penetration in mild-steel plate of 4 in. to 4½ in. will be secured with either of the charges; or, translated into oil-well terms, a hole through a section of casing and 6 in. to 9 in. of cement will be opened. This variation in penetration is a function of the fluids through which the jet must pass before striking the casing. In perforating casing, the carrier will usually lie along one side of the pipe, so that some of the jets will have little or no fluid to displace, whereas others will have the maximum distance between the carrier and the walls of the casing. Further studies have been made of the effect on penetration when the path is not normal to the casing. Due to the usual nonconcentricity of the carrier within the casing, it can be assumed that many of the jets strike the walls of the pipe at some angle other than perpendicular to the tangent. It was ascertained that, due to the extreme high velocity,

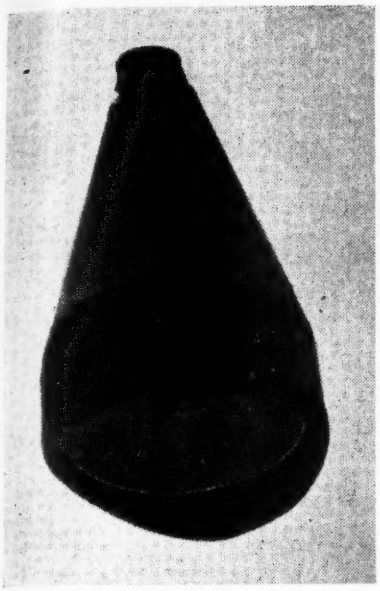

**FIG. 4**
**Casing Perforating Charges**

there was no tendency for the jet to be deflected, and that there was no noticeable decrease in the overall penetration secured.

The passage of the jet through the casing causes a flow of metal to the inside of the casing, resulting in a "burr." These burrs have been found to protrude between 1/64 in. and 1/16 in. from the inner wall of the casing.

A study of the effect of the shaped-charge jet on the cement in the annulus has revealed that there is little or no tendency for the cement to shatter or crack, even after prolonged setting periods; and it appears that the practice of perforating cement at predetermined age and strength, in order to eliminate the formation of cracks or fissures which will cause future trouble from gas to water, will not be necessary. There is a tendency for the jet to form a small "pocket" in the cement adjacent to the outer wall of the casing. The size of this pocket varies with the age and strength of the cement, and is formed whenever the jet passes through one medium into a softer material. In the perforating of multiple strings of casing, the "pocket" is formed on the outside of each string. Its average size in 21-day-old cement will be about ¾ in. in diameter and 1 in. in length.

All tendency toward the splitting or damaging of the casing during perforating operations has been eliminated. Exhaustive tests with many grades and weights of pipe have been conducted under what are considered to be extreme conditions, resulting in no splitting or bulging. The tests were made with both 5½-in.-OD and 7-in.-OD pipe nipples of various grades and weights, 8 ft. long, open at both ends, and unsupported under a 6-ft. head of fluid. The charges were fired under a 6-ft. head of fluid, because a low fluid head constitutes a more severe test than a high fluid head. The pipes were pierced to a perforating density of 12 shots per foot, many of the holes being within 1 in. of each other. No splitting was encountered.

The jet effect from a shaped charge can be secured, to some degree, with the use of almost any high explosive. Commercial dynamite has been used, as has nitroglycerin, and both powdered and cast TNT. However, in order to secure the best results, i.e., maximum penetration, it has been found that an explosive with a high brisance or velocity of detonation, together with a high acceleration of detonation, is necessary. The commonly used explosive in military projectiles was known as pentolite (a mixture of TNT and PETN),* which was poured into the projectile in a liquid state and passed into the solid state upon cooling with a density of 1.6. Pentolite has all of the qualities necessary for efficient

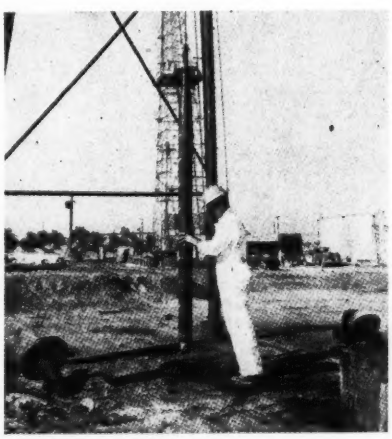

**FIG 5**
**Casing Perforating Charge Carriers.**

**FIG. 6**
**The "Carrot" (i.e., that portion of the metal liner which has not been converted into small particles that assist in the formation of the jet).**

shaped-charge operation, i.e., relative insensitivity to shock, high energy content, and high velocity of detonation (7,500 meters per second); but for oil-well use it has the unsatisfactory feature of a low melting point (180 deg. F). It was necessary that an explosive be developed that would contain the desirable features of pentolite and that would withstand the high temperatures encountered in the deep oil wells of today. When loaded at high density in casing perforator charges, the explosive finally chosen is relatively insensitive to shock; has a high rate of detonation, a high energy content; will burn without detonating, and is sensitive to prima-cord detonation only when the prima-cord is threaded through the end of the charge designed for its entry. In addition to these features, it is designed to withstand a temperature of 325 deg. F for 24 hours and a temperature of 350 deg. F for 1 hour. If excessive temperatures are encountered, it will fume off into a gas—excluding all possibility of premature or unwanted detonation due to high temperature. These qualities, together with the insulating property of the hollow tubular carrier, make the explosive entirely feasible for use at any well temperature encountered to date (Fig. 6).

### Open-Hole Blasting

This phase of the shaped-charge process is still considered to be in the experimental stage of its development. The shaped charges used are of the same basic design as the casing perforating charges, but are larger—designed to produce holes of a greater diameter and a

*Pentaerythritol tetranitrate.

# A new era in Power for the Oil Fields

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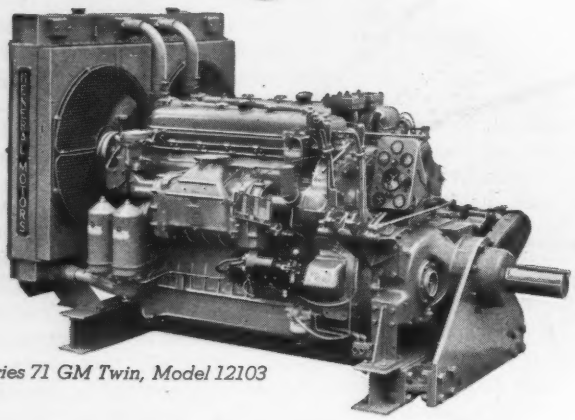
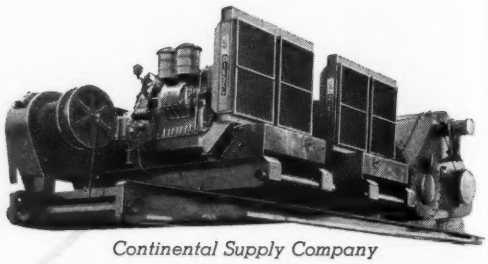



*Series 71 GM Twin, Model 12103*



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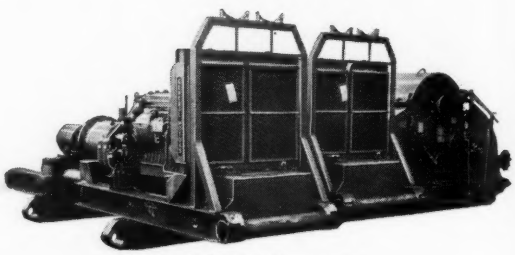
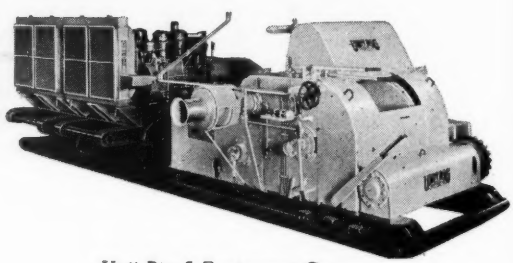


*National Supply Company*



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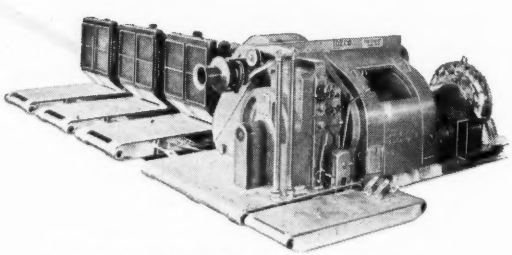

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The application of Series 71 GM Diesel power to oil field equipment is expanding rapidly. This is because these engines are low in weight and small in size compared to their power. They are smooth operating and take up their load quickly and easily. They are simple, dependable and economical.

Manufacturers and operators of drilling machinery know that this kind of dependability, economy and flexibility in compounding pays off. It's why you see more and more equipment for the oil fields powered with General Motors Diesels. Let us give you all the facts.

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*DIESEL ENGINE SALES, PETROLEUM INDUSTRY, 1504 PHILTOWER BUILDING, TULSA 3, OKLA.*

greater depth of penetration. The practical application of this phase of the process is the penetration of a sufficient distance back into the formation of producing wells that show a decrease in production due to a clogged congested sand condition, and to create crevices through which trapped well fluids may flow. It is even more adaptable to wells which are to be treated with acid, in that it will establish holes some distance back into the formation and create a much greater area of clean formation on which the acid may work.

### Conclusion

It is confidently expected, as a result of the active research program being conducted on this process, that refinements and improvements will be developed, and additional applications will be derived such that, before the adaptation of the principles of shaped charges to petroleum production can be considered complete, it will have proved to be a valuable asset to the more economical production of oil and gas, and a means of securing a greater ultimate recovery.


### Acknowledgment

The author wishes to acknowledge the direction and participation of Messrs. Robert T. Harcus of Byron Jackson Company, Los Angeles; Eugene O. Tolson and Henry H. Mohaupt of Well Explosives, Inc., Fort Worth. The explosive composition and the casing perforator charges containing it are developments of E. I. du Pont de Nemours and Company, of Wilmington, Del., the charges having been developed with the assistance and cooperation of the aforenamed individuals and organizations. Fig. 3 was taken from the paper "Studies of the Design of Shaped Explosive Charges and Their Effect on Breaking Concrete Blocks," by George B. Clark, American Institute of Mining and Metallurgical Engineers, March 1947.

Approval for the presentation and publication of this paper has been given by the U. S. Army Ordnance Department.

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**Presented Before the Annual Meeting of the American Petroleum Institute.**


## New Road-Test Laboratory Announced By Du Pont Co.

A Road-Test Laboratory, to test petroleum chemicals in motor fuels, is being established by the Du Pont Company at El Monte, California. Iver Theodore Rosenlund, research engineer, has been named laboratory manager.

**Iver T. Rosenlund**

Complete analysis tests, under actual operating conditions, will be made on oils, Diesel fuels and all types of gasolines, both chemically and physically. Particular emphasis will be put on the various products of the Du Pont Petroleum Chemicals Division, especially on tetraethyl lead compounds, which Du Pont will market directly to the oil industry beginning Jan. 1, 1948.

Heavy-duty trucks were selected for the initial work, to start January 1, 1948, as their requirements regarding motor fuels are exacting and their operating conditions severe, both on the engine and in fuel performance.

Octane requirements of different types of vehicles will be studied and determined. The work will include testing new and existing products in present-day gasoline and future gasolines, and in determining effect of chemical additions to motor fuels, both in road performance and on the engines.

The tests and road runs will go on 24 hours a day. They will include city and desert driving and mountain climbing, in all kinds of weather.

The laboratory equipment, which is being installed, includes knock-test engines, complete analytical and garage facilities, chemical laboratory, drafting and photographic appliances, and will be be manned by a staff of engineers, chemists, drivers and mechanics.

The laboratory will offer to do research work for oil companies which do not have sufficient facilities.

In addition to the Road-Test Laboratory, there will be a district service laboratory at El Monte—there is a service laboratory for each sales district in the nation—to offer technical service to the refining industry. These service laboratories will also be equipped to test the properties of motor fuels and lubricants, and will aid refiners in the application of Du Pont's tetraethyl lead compounds, in the safe handling of tetraethyl lead, and, in general, be available for refiners' problems. Larger problems of refiners will be forwarded to the main laboratories of the Du Pont Company where more complete facilities will be available.

Mr Rosenlund, 33, a native of Worcester, Mass., came to the Du Pont Company on March 15, 1947, with broad engine research experience gained with several companies.

On graduation from the University of Michigan in 1937, with a bachelor of science degree in aeronautical engineering, he tested aircraft engines for the Pratt & Whitney Aircraft Company. In 1938 he joined the Norton Machine Tool Company, in his hometown of Worcester, and was concerned with machine tool development. A year later he became a research engineer on aircraft petroleum products for The Texas Company in its research laboratory at Beacon, N.Y.

From 1942 to 1945 Mr. Rosenlund was a fuel and lubrication engineer with Allison Division of General Motors at Indianapolis, Ind.; then he joined the Packard Motor Car Company, in 1945, in the jet-engine division at Toledo, Ohio, as project engineer on combustion chamber development. He resigned from Packard on February 15, 1947.

# "CBV" COMBINATION BALANCED VALVES

## *For Precision in Gas Regulation!*

The right gas pressure with continuous control is a prime need supplied by the "CBV" type regulators. These are combination balanced valves built in two interchangeable styles—either offset connected or direct connected.

The offset model allows easy access to inner valve assembly through a hand hole plate. It does not require removal of the entire superstructure to examine or change the valve assembly. In changing from a high to a low pressure regulator, the diaphragm chamber unit is replaced and the rocker arm shaft is changed to a low pressure rocker arm shaft. The offset connected style has a fulcrum between the diaphragm and valve assemblies.

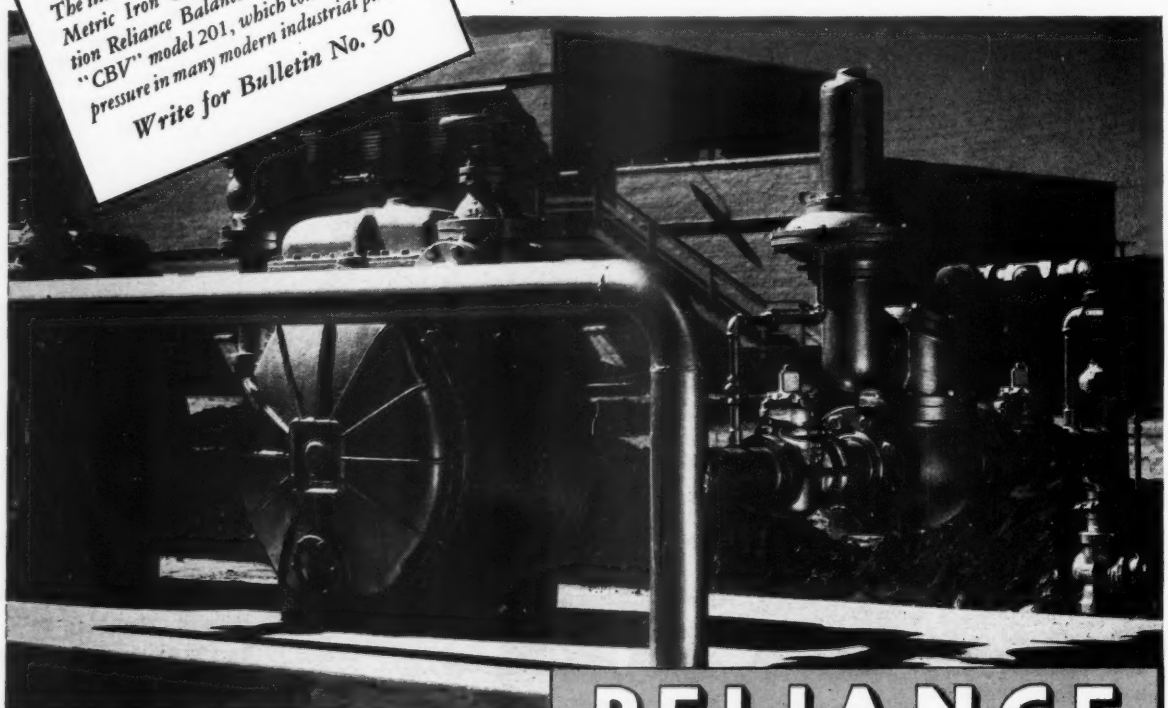
In the direct connected regulator, the diaphragm assembly is connected straight through to the valve assembly. It comes in three optional types: the high pressure weight-loaded; spring-loaded; or pilot-loaded. This model also has interchangeable parts which permit switching to a spring or pilot-loaded assembly. The change is made by replacing the pressure lever cap with the spring housing unit or with the pilot cap. These quick and easy changes help to meet new needs and specifications.

Both offset and direct connected models are offered in high pressure weight-loaded, spring-loaded, or pilot-loaded types. Low pressure models are pilot-loaded or weight-loaded, either inside or outside weights being available. Semi-low pressure regulators are made in pilot-loaded or outside weight-loaded types. The low pressure and semi-low pressure regulators are offered only in the offset style. A 3.4 to 1 ratio is maintained to provide better lock-up under low pressures.

Valve body castings are the same for either high pressure or low pressure types. A free flow of gas is provided at the point of expansion and body friction is reduced to a minimum. Directional flow arrows are cast into both sides of valve body castings for the user's convenience.

*The illustration below shows an American Metric Iron Case Meter and combination Reliance Balanced Valve Regulator, "CBV" model 201, which controls the gas pressure in many modern industrial plants.*

***Write for Bulletin No. 50***



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# With Drilling Contractors

With E. C. (Ned) Brown as president, California is represented strongly among officers named by the American Association of Oilwell Drilling Contractors to serve for the ensuing year.

Brown, president of Brown Drilling Co. in Long Beach, formerly was vice president of the association for California. His efforts always have been tireless in behalf of the best interests of the contracting industry.

D. H. (Doug) Graham, who was elected vice president for California, is a veteran driller and a partner in the firm of Dunlap & Graham Drilling Co. at Long Beach. He has been for years in the forefront of association and oil industry activities as a whole.

Regional directors for 1947 also were elected. They are A. S. (Doc) Hayes, Hayes & Sprague; Ralph W. Marshall, Drilling & Exploration Co.; and Thomas P. Pike, Pike Drilling Co., Los Angeles. Also elected were Karl L. Kellogg, Karl L. Kellogg Drilling Co., Compton; and Gene Reid, Reid Drilling Co., Bakersfield. Brown and Graham, in addition to their official posts, were appointed directors at large.

---

The newly formed Acme Drilling Co. has the contract from Harry Hunter & Associates to drill P. T. No. 2 in the Huntington Beach field. Tom Bannon is manager of the new company, which maintains headquarters at 448 South Hill street, Los Angeles.

---

Severns Drilling Co. will drill Lawrence P. Kraemer's 8000-ft. test on Union Oil's old Copeland lease in the Huntington Beach field. Location is near the intersection of Golden West and Schleicher roads.

---

Rocky Mountain Drilling Co., contractor on Standard of California's Maxwell No. 1 in the Montalvo area, is chalking up a new depth record for Southern California. Operations already have reached 15,100 ft. in the deepest hole to date ever drilled in the Southland. The old depth record was held by Standard's Fillmore Community No. 2-1, which more than two years ago went to a bottom of 14,512 ft.

---

Gene Reid Drilling Co. will drill Pongratz Petroleum's Winters No. 1 in Sec. 10-30s-28e north of the Mountain View field. Objectives probably will be the Santa Margarita or Wicker zones.

---

Contract for drilling the first well in Loren L. Hillman's exploratory campaign south of the Round Mountain field has been let to George Terry. The lease embraces no less than 1200 acres.

---

One of the most interesting contract drilling jobs in the state is L. M. Lockhart's Tevis No. 1 in the Bolinas area, 40 miles north of San Francisco in Marin County. Dunlap & Graham is in charge of operations.

---

Jerome J. O'Brien of Shamrock Drilling Co., Los Angeles, in recent months has been dividing his time between California and the Mid-Continent area. Shamrock during the past year has participated in several important discoveries in Kansas and Oklahoma.

---

California contractor drillers, who extend their operations to many a foreign clime, are evidencing some interest in oil in the Gaboons' Colony in French Equatorial Africa. An oil field of extensive proportions apparently has been opened up near Pointe Noire, with wells tapping zones between 8500 and 9000 ft.

San Joaquin Drilling Co.'s closely watched deep test being drilled for Pacific Western 25 miles from Price in Carbon County, Utah, is working on a fishing job, with present depth around 12,100 ft. As soon as the mechanical trouble is cleaned up, a carbon dioxide zone will be tried. This interval showed extremely high pressure and promises much in the way of production. No hole in Utah has ever remotely approached the level already attained by the Pacific Western project. Drilling in recent days has been really tough, with only two to six inches of hole being made with each diamond core bit.

---

Frank Creasey, drilling contractor is preparing to drill three wells for Victory Oil Co. in the Cymric field. They are No. 33, 34 and 35 in Sec. 26-29s-21e.

---

LeBow & McNee has started the drill in Mutual Development's Sanborn No. 1 wildcat in the Newhall area.

---

Crown Drilling Co. has the contract from Texas Co. for three more drilling jobs in the Kern Front field. The wells are No. 10, 11 and 12 in Sec. 26-28s-27e.

---

Buaas Drilling Co. of Taft, headed by genial Walter Buaas, is giving the finishing touches to Standard's No. 366-19R Navy job in the Elk Hills field.

---

More exploratory ventures were drilled on contract in the first half of 1947 than in any comparable period in the history of the oil industry. Prospect drilling this year is running about 12 per cent over last year's previous record for this type of drilling. The record is surprising in view of the scarcity of steel for drill pipe and other tubular goods in many of the nation's areas.

# THIS LAUGH OFF!!

She: "Did anyone ever tell you how wonderful you are?"

He: "Don't believe they ever did."

She: "Then where did you get the idea?"

---

A teacher was defining the word "recuperate."

"For instance," she said to one small boy, your father worked hard all day, and he's tired and worn out, isn't he?"

"Yes, ma'am."

"Then, when night comes and he's through for the day, what does he do?"

"Gee," said the youngster, "that's what mother wants to know,'"

---

"Was your uncle sensible until the last?"

"I won't know until his will is read tomorrow."

---

Under the swinging street car strap
The homely girlie stood,
And stood and stood and
Stood and stood and stood.

---

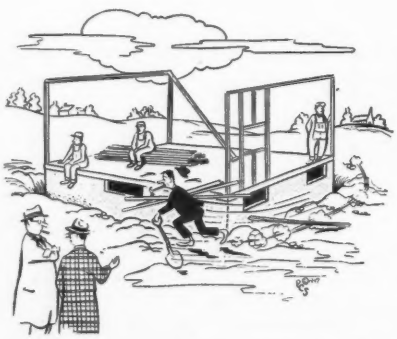
The girl who stepped out with the big lumber man wound up with a little shaver.

**"Don't pay any attention to my husband, Mr. Gravitt. All he thinks about is the high cost of living."**

The director was exasperated by the chorus' inability to learn its routines and exploded in a blistering tirade not only at the ladies' intelligence but reflecting on their moral character as well.

One beauty left the theater in tears and appeared next day with a medical certification of her virginity.

"It's no good," the director snorted, "It's dated yesterday."



**"This is Mr. Trever's new house and that is Mr. Trever saving on construction costs."**

The colonel had insisted to his negro cook that the Thanksgiving turkey be a domestic, corn-fed bird, no wild fowl. Came the day and the colonel cut into a beautiful, done-to-perfection turkey, frowned, cut again, then sent for Sam.

"Didn't I tell you I wanted a domestic bird?" he thundered.

"Yah, suh, dat's a domestic, corn-fed fowl."

"Well, what about this shot I'm finding?"

Sam shuffled from one foot to the other. "Dat shot, colonel suh, were meant fo' me.

---

Home: A place where a man is free to say anything he pleases, because no one pays the slightest attention to him.

---

Drunk (moaning at the bar): "It's terrible, terrible, the cost of living has gone up to $4.18 a quart."

Curie complained that his famous formula, "Every day in every way, I'm getting better and better," was of little use in America. It took too long to say. Americans just cut it down to "Hell, I'm well."

**JENSENS *Cut* PRODUCTION *Costs***

**Lots of folks won't believe this statement. They figure whatever kind of pumping unit they're now using gives them all the profit they can get from a well.**

**These are the folks who don't know about Jensens' precision gears and tapered roller bearings, rugged electric arc welded construction, positive friction reducing lubrication and other cost cutting features —all backed by 28 years experience.**

**The producers who make the most profit know and use Jensens. Keep up with these folks by contacting your Jensen dealer or write to Coffeyville today.**

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**EXPORT OFFICE, 50 Church St.**
**New York City**

# Field Development

PREPARED FROM CALIFORNIA OIL WORLD NEWS SERVICE

## Los Angeles Basin

### Castaic Test Drills Ahead

Drilling is going ahead below 600 ft. in L. R. Wilhite and Claude Kavanaugh's Wilhite-Jenkins No. 1 wildcat in Sec. 18-5n-16w in the Castiac area, Los Angeles County.

### Orange County Wildcat Scene

Universal Consolidated has spudded and at last reports was drilling at 803 ft. with its C. & T. No. 1 in Sec. 5-4s-9w in the Richfield area, Orange County. Basin Oil's Collins-Wilson No. 1 in Sec. 33-3s-9w is making hole at 211 ft. Near El Toro, Morton & Sons is digging at 3495 ft. with No. 14-1 in Sec. 14-6s-8w.

### Newhall-Potrero Project Drilling

Barnsdall Oil's RSF No. 68 in Sec. 36-4n-17w in the Newhall-Potrero field is drilling on down at 4910 ft. It is an offset to General Exploration's Ferguson No. 3 discovery well. Standard of California is spot coring at 7948 ft. with NL&F No. 5-1 in Sec. 34-4n-16w near Newhall. The company's Frew No. 1-4 in Sec. 29-3n-16w is drilling at 5993 ft. Bankline Oil is grading roads for Newhall Corp. No. 1 in Sec. 31-4n-16w. In the Pico Canyon sector of the area, Mutual Development Corp. is making hole at 931 ft. with Sanborn No. 1 in Sec. 6-3n-16w. The Texas Co.'s Malis No. 1 in Sec. 10-4n-17w in the Val Verde district is spotting oil in an effort to remove stuck drill pipe. Total depth is 8363 ft., with fish stuck at 5200 and 8350 ft. Electric log was run to 8057 ft.

### Dominguez Try Now Moving In

Morton & Sons is moving in machinery and equipment for Dominguez Estate No. 1 wildcat test in Sec. 3-4s-13w in the Dominguez area. Location falls 1400 ft. south and 475 ft. west of the northeast corner of the section.

### Oak Canyon Wildcat Digs

In the Oak Canyon area, Continental Oil is prospecting ahead at 4225 ft. with Videgain No. 1 in Sec. 4-4n-17w, Los Angeles County.

### Palos Verdes Test Drilling

Near the intersection of Palos Verdes drive and Western avenue in the Palos Verdes area, Lesco Oil Corp. is drilling at 550 ft. with its Sepulveda No. 1 in Sec. 22-5s-14w, Los Angeles County.

### Whittier Well Drills Deeper

Drilling is continuing ahead at a depth of 7968 ft. in Livingston Drilling and Development Co.'s Dewey No. 1 exploratory venture in Sec. 1-3s-11w in the East Whittier area.

**Part of Rocky Mountain Drilling Co. crew on Standard Oil Co.'s Houghton No. 1 in Sec. 36-2s-12w in the west end of the Santa Fe Springs Field. left to right: Herman Rendzelman, Pipe Racker; V. C. McGuire, Rotary; A. T. Mayton, Cathead; J. A. Sales, Driller; E. L. Byrd, Derrick.**

## Shell Starts Athens Venture

West of the Athens field, Shell Oil has staked location for Moser Community No. 1 in Sec. 12-3s-14w. The drill site is not far from an old test well drilled by McMahon & McDonald on the Kirst property, which had an unsuccessful trip to around 4660 ft.

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## Anaheim Try Spot Coring

Southwest of Anaheim, Tide Water Associated is spot coring at 8525 ft. with Nel-Cal-Lu Community No. 1 in Sec. 21-4s-10w, Orange County.

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## West Newport Still Active

Amerada Petroleum is continuing its development campaign in the West Newport area. It has completed Farnsworth No. 47 in Sec. 7-6s-10w, pumping an estimated 300 barrels daily from 5550 ft. No. 37 is a foundation and Irvine No. 57 is making hole ahead at 3765 ft.

In Sec. 28-6s-10w, Fred B. Donnelly and Julia B. Magee have location made for No. 1. Honolulu Oil's Holtz No. 1-81 in Sec. 1-6s-11w is an abandonment at 6492 ft. Standard's Thornburg No. 2-1 in Sec. 12-6s-10w is spot coring around 3000 ft. Republic Petroleum has reached 2276 ft. with Newland No. 1 in Sec. 12-6s-11w. Hiawatha Exploration's No. 5 in the Atha area is standing with casing cemented on bottom at 3131 ft. Morton and Kohlbush, Anaheim Sugar No. 7-3 has run and set casing to 5553 ft. The project is in Sec. 6.

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## Beach City Well Starts

A new and interesting deep drilling job is scheduled for the Huntington Beach field. L. P. Kraemer is the sponsor of the well, which is located 308 ft. south and 128 feet west of the center line of Golden West Avenue and Schleicher road in Sec. 34-5s-11w. Location falls on the old Union-Copeland lease near ground held by Holly Oil Co. The project will go to at least 8000 ft.

Harry Hunter & Associates has poured foundation for P. T. No. 2 in Sec. 10-6s-11w. No. 1 was finished recently at 2247 ft. for an initial output of 100 barrels daily, cutting 40 per cent. Quartette Oil Co. is rigging up No. 3 in the section near 16th and Palm streets.

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## Alondra Developing

General Petroleum is digging at 2320 ft. with Alondra Community No. 8-1 in Sec. 16-3s-14w in the Alondra area near Gardena in Los Angeles County. British-American Oil Producing has made location for Hall No. 1 in the section. The company's Village Community No. 1 in Sec. 22-3s-14w is biting with the bit at 6337 ft.

---

## Springs Try Now Reaming

Standard of California's Houghton Community No. 1 wildcat in the vicinity of the Santa Fe Springs field in Sec. 36-2n-12w is reaming, with hole bottomed at 7566 ft.


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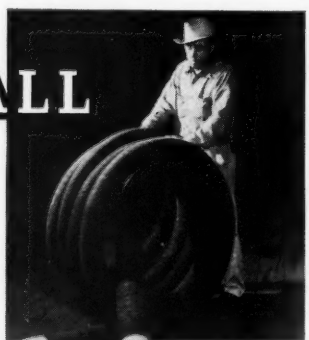

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## Del Valle Well Flows

R. E. Havenstrite's recently completed Lincoln No. 15 in Sec. 16-4-17 on the south flank of the Del Valle field is flowing at the rate of 200 barrels daily through a 10/64-in. bean. Yield comes mainly from the Anderson zone between 7550 and 8150 ft., with a new deep zone also open at 10,140 ft. Total depth is 11,865 ft., with plug at 11,742 ft.

## Richfield Area Redrill Listed

Sam P. Mullen of Fillmore is planning to redrill the old Imperial Gypsum & Oil Corp., Atwood No. 1 in the Richfield area. Mullen is president of Merchants Petroleum Co., Fillmore oil developing organization.

## Athens Try Plugged Back

Union Oil has plugged back its Rosecrans No. 48 in the Athens-Rosecrans area from 11,884 ft. to 9980 ft., after the lower formations showed nothing of commercial value. Water shut off was okay on four holes perforated at 8203-8204 ft. and the well is now ready for perforating at 8740-8542 ft.

## Inglewood Field Adds New Interest

Basin Oil's Inglewood Community No. 2-1 in Sec. 28-2s-14w, an extension test of the Inglewood City field, has been completed at 10,375 ft. On a two-hour gauge, the well flowed at a rate of 325 barrels of oil and 1,300,000 cubic ft. of gas a day. Casing is set at 9947 ft. with more than 400 ft. of formation open to production. The company is starting two new wells. They are No. 3-1 and No. 5-1 in the section. The Inglewood Gasoline plant is understood considering capacity expansion as a means of taking care of the gas and natural gasoline from the field.

## Long Beach Wells Going

Shell Oil's Alamitos No. 49-A in Sec. 29-4s-12w, a followup to its deep zone discovery well on the flank of Signal Hill, has reached 5522 ft., but is having some difficulty in regaining circulation. General Petroleum, meantime, is fishing drill pipe, after a twist-off at 9294 ft. Total depth is 9965 ft. The well is on a lease originally owned by Italo Petroleum. Pacific Western's Hilton-Stanton No. 1 is drilling at 8022 ft. Los Nietos Co.'s East L. B. Community No. 1 is still a location only in Sec. 33-4s-12w. The latter will be whipstocked under the town lots in the East Long Beach area from a drill site near the intersection of Ransom and Termino streets.


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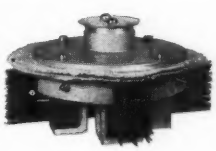

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# San Joaquin Valley

### Sharktooth Try Rigging To Pump

Pump is being rigged to Independent Exploration's Swan No. 1 in Sec. 15-28s-28e in the Sharktooth area near the Round Mountain field. The hole is bottomed at 2723 ft. and 7-in. pipe is set at 2706 ft. McDonald-Purdy No. 81-28 in Sec. 28-29s-21e in the Cymric area is drilling at 6925 ft. Cymric No. 23 recently came in from 4900 ft. flowing at the rate of 750 barrels daily.

### Paloma Well Plugged Back

General Petroleum has plugged back its Benco No. 76-28 in Sec. 28-31s-26e on the north flank of the Paloma field, preparatory to redrilling the well. Whipstock has been set at 10,963 ft. and window is now being milled. Total depth is 11,641 ft.

### San Emigdio Test Coring

On the San Emigdio ranch in Kern County, Continental Oil is coring hard shale at 11,402 ft. with KCL No. L-2 in Sec. 8-11n-21w. Santiago No. 1 in Sec. 8-11n-22w is digging at 4414 ft. Apex Petroleum's Los Lobos No. 1 in Sec. 5-10n-22w has been abandoned. Original depth is 3505 ft. The hole redrilled to 1638 ft. and subsequently plugged back to 850 ft.

### Williams Try Oil Failure

F. W. Williams has given up his Williams No. 1 in Sec. 5-28s-20e in the Williams area at a depth of 3098 ft. Nothing of interest was reported.

### Sharktooth Job Testing

Barnsdall Oil's Alma No. 1 in Sec. 22-30s-22e in the Sharktooth area is ready to perforate for production test. Original bottom is 2764 ft., with casing set at that point. Plugged bottom is 2725 ft. The venture is a probable fault block Vedder discovery. Barnsdall is rigging up and laying water lines for its Leutholz No. 1 in Sec. 22-30s-22e in the McKittrick area.

### Strand Try Drilling On

In the Strand area, where commercial yield was first found during 1939, Beloil Corp., Ltd. is drilling below 5300 ft. with KCL-B No. A-1 in Sec. 18-30s-26e, Kern County.

### Temblor Try Makes Ready

With the Button Bed oil sand zone the probable objective, Ferguson & Bosworth has made location for a test well in the Temblor area in Sec. 30-29s-21e. The 160-acre lease is not a great distance from a number of test wells which met defeat from a production standpoint. Companies which have already tried the general area include Beverly Trading and Exploration, and Calumet Gold Mines. These earlier inquisitors found showings, but apparently of the sub-commercial variety.

### Fruitvale Try Going

LeBow and McNee last were reported drilling slightly beyond the 1100-ft. level with KCL-A No. 1 in Sec. 34-29s-27e in the Fruitvale area.

### Madera Test Spudded In

Jergins Oil has spudded and is drilling ahead at 933 ft. with Escapedo No. 1 in Sec. 32-14s-12e in the Mendota area of Madera County.

### Ant Hill Wildcat Runs Electric Log

Electric log run to 3806 ft. is the next move in General Petroleum's Cottonwood No. 68-24 in Sec. 24-29s-29e in the Ant Hill area. Ninkovitch No. 62-9 in Sec. 9-30s-21e in the McKittrick area is spot coring and drilling ahead at 4100 ft.


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## Mountain View Wildcat Fishes

Following a formation test, Pacific Western's P. H. Greer No. 53 in Sec. 9-31s-29e in the Mountain View area is fishing for stuck drill pipe.

Reaction of the well to formation trial was indicative of a possible discovery. Hole is bottomed in schist at 7323 ft.

Rankin No. 85-30 in Sec. 30-30s-22e near the McKittrick field flowed salt water on test from above plug at 5720 ft. Total depth is 6288 ft. Midway - McKittrick No. A-63-30 and No. A-83-30 are both grading ground. Waechter No. 24 is coring at 6986 ft. The venture is in the San Joaquin area in Sec. 32-15s-17e, Fresno County.

## Kettleman Hills Tests Operating

Standard is redrilling slowly ahead at 11,834 ft. with its No. 73-30V in Sec. 30-23s-19e in Kettleman Hills Middle Dome. Redrill will go to around 12,000 ft. and stop temporarily to run electric log and set pipe. Original depth is 12,389 ft. in the Eocene. SF&FL No. 4-2 in Sec. 12-25s-19e in the South Dome area is making hole below 7700 ft.

## Cuyama Valley Wildcat Drills

On the Porter ranch near the river in the Cuyama Valley, Norris Oil Co. is drilling at 1610 ft. with Cuyama No. 2 in Sec. 25-11n-28w, San Luis Obispo County. The well formerly was called Halvern L. Norris No. 3.

## Mountain View Explorer Drills

Mar Roo Syndicate's Petromont No. 1 in Sec. 29-30s-29e in the Mountain View area is prospecting ahead at 4250 ft. The well is north of Cleveland Oil's Ten Eyck No. 2 and if successful probably will call for offset drilling by Cleveland.

## Ant Hill Try Fails

International Exploration Co.'s Linda No. 3 in Sec. 2-29s-29e in the Ant Hill area has been abandoned at 1244 ft. as a duster. The well was started under the banner of Maurer & Fisher.

## Pioneer Try Digs

In the Pioneer Anticline area, Western Gulf is prospecting near 5800 ft. with its B. & M.-U.S. No. 1 in Sec. 30-11n-23w, San Joaquin Valley.

## Comanche Point Wildcat Drills

Richfield Oil is making hole ahead at 1840 ft. with S. P. No. 10 in Sec. 25-12n-19w in the Comanche Point area. At Wheeler Ridge, Wheeler Ridge-KCL No. C-1 in Sec. 20-11n-20w is redrilling at 3750 ft.

## Bacon Hills Try Drilling

Seaboard Oil's current explorer in the Bacon Hills area is drilling in sand and shale at 5063 ft. The well, No. 26-21, is in Sec. 21-28s-20e.


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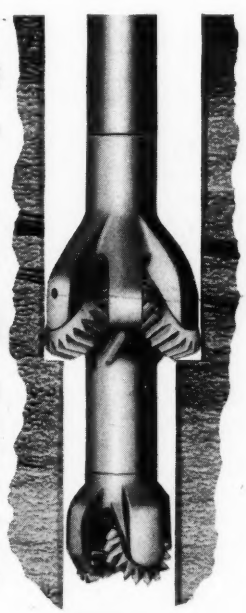

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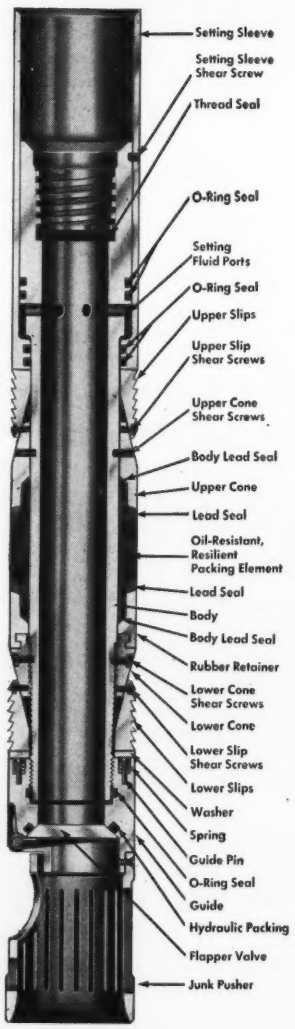


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# Coastal and Northern District

## Byron Gas Try Prospecting

Amerada Petroleum is prospecting on down at 5571 ft. with Cal-Pack No. 1 in Sec. 10-1s-4e in the Byron area, San Joaquin County. Liberty Farms No. 2 in Sec. 7-5n-3e in the Cache Slough area in Solano County is rigging derrick. Crocker Estate No. A-2 in Sec. 23-6n-2e in the Maine Prairie gas field has been given up as a failure at 4875 ft. It is northwest of the abandoned Crocker No. 1.

## Casmalia Project Ready To Run Tests

Adams Oil Co. is preparing to inaugurate open hole tests of its Morganti No. 4 in Sec. 13-9n-35w in the Casmalia field. The 8⅝-in. casing is set at 1375 ft. and blank 6⅝-in. pipe at 3520 ft., with water shut off okay. A test will be made of the interval between 3520 ft. and plug at 4190 ft. If this interval fails to show satisfactory production, the 6⅝-in. will be perforated and trials conducted uphole. The project found the normal chert zone from 1375 ft. to 1800 ft. Total depth is 4441 ft.

## Huasna Test Showing Oil

With reported showings of oil and gas, Danciger Oil & Refining Co. is drilling ahead at 1204 ft. in chert in Twitchell No. 1 in Sec. 35-23s-15e in the Huasna area of San Luis Obispo County.

## Kirby Hills Test Boring

Bishop Oil Co.'s Bishop-Calaveras-Triguero No. 1 in Sec. 5-3n-1e in the Kirby Hills area is boring ahead at 3150 ft. Shell Oil has piles in for its Harper No. 1 in Sec. 14-4n-1w. Lambie No. 5 in Sec. 25 is drilling at 495 ft.

## Cat Canyon Test Coring

General Petroleum is spot coring at 5779 ft. with Realty No. 73-10 in Sec. 10-9n-33w in the Cat Canyon area. East of the field in Olivera Canyon, Union Oil has finished McCroskey No. 2 in Sec. 20-9n-32w for 70 barrels on the pump from 5560 ft. The output is encouraged by the injection of a diluent to reduce the viscosity of the heavy crude of 7-deg. gravity.

## Sespe Test Drills Ahead

Eagle Rock Petroleum Co.'s Eagle Rock No. 1 test well in Sec. 36-5n-20w in the Sespe area is drilling shale below 1000 ft. Kirk Oil's Edwards No. 1 in Sec. 27-4n-19w is digging at 2649 ft. In the Sespe Forks sector, Republic operators, Inc., is preparing to deepen Arundell No. 1 from present depth of 4010 ft. Located in Sec. 6-4n-19w, the project apparently pumped off.

## Ojai Try Now Cores

In the Ojai area in Ventura County, Richfield is coring at 2702 ft. with Ojai No. 50 in Sec. 13-4n-22w.

## Goleta Job Drills Ahead

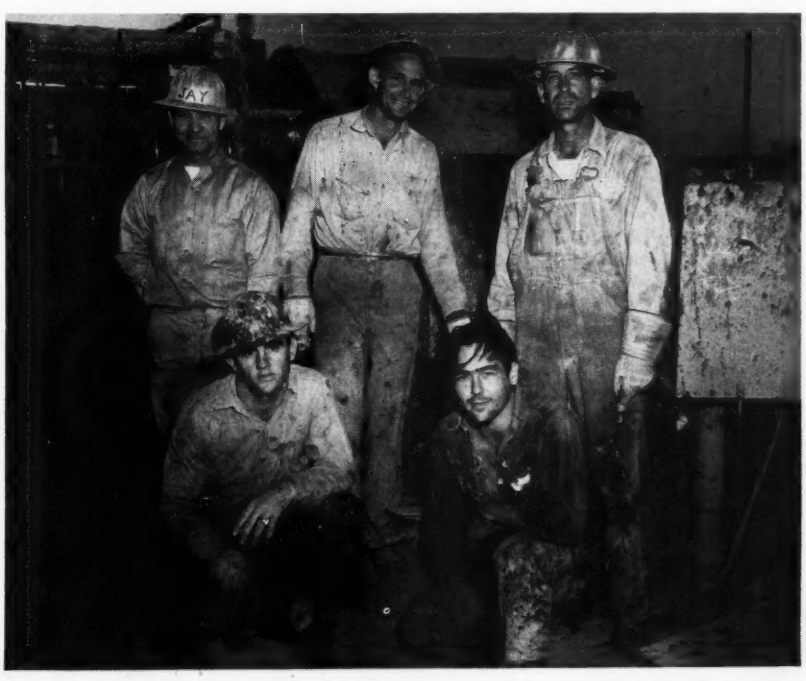
Honolulu Oil Corp.'s Honolulu-Signal-Macco-State No. 309-2 in Sec. 19-4n-28w in the Goleta area in Santa Barbara County, is continuing to make headway with the drill at 3610 ft.

## Four Deer Well Pumps

Drilled to a total depth of 5978 ft. and bridged at 4568 ft., Sunray Oil has completed Los Flores No. 3 in Sec. 4-8n-33w in the Four Deer area for 105 barrels of 35.5 gravity oil daily. No. 5 is drilling at 1635 ft. and No. 4 is a foundation. The area took its name from four deer browsing on a near by hill during the final stages of the discovery well.

## Montalvo Area Active Center

Cleaning out at 10,240 ft. is the latest report from Richfield's Del Cielo No. 1 in Sec. 30-2n-22w in the Montalvo area. A recent formation test of the interval of 9483-9700 ft. showed light blows by heads. Swabbing recovered muddy salt water with trace of oil and gas. Total



**At the Costa Mesa Field, South of Huntington Beach, on the Hiawatha Lease, Atha No. 5: Front row, left to right, G. W. Kipper, Cathead; G. R. Fulbright, Rotary; back row, left to right, Jay Branon, Pipe Racker; C. E. Boyter, Driller; W. J. Darredt, Derrick.**

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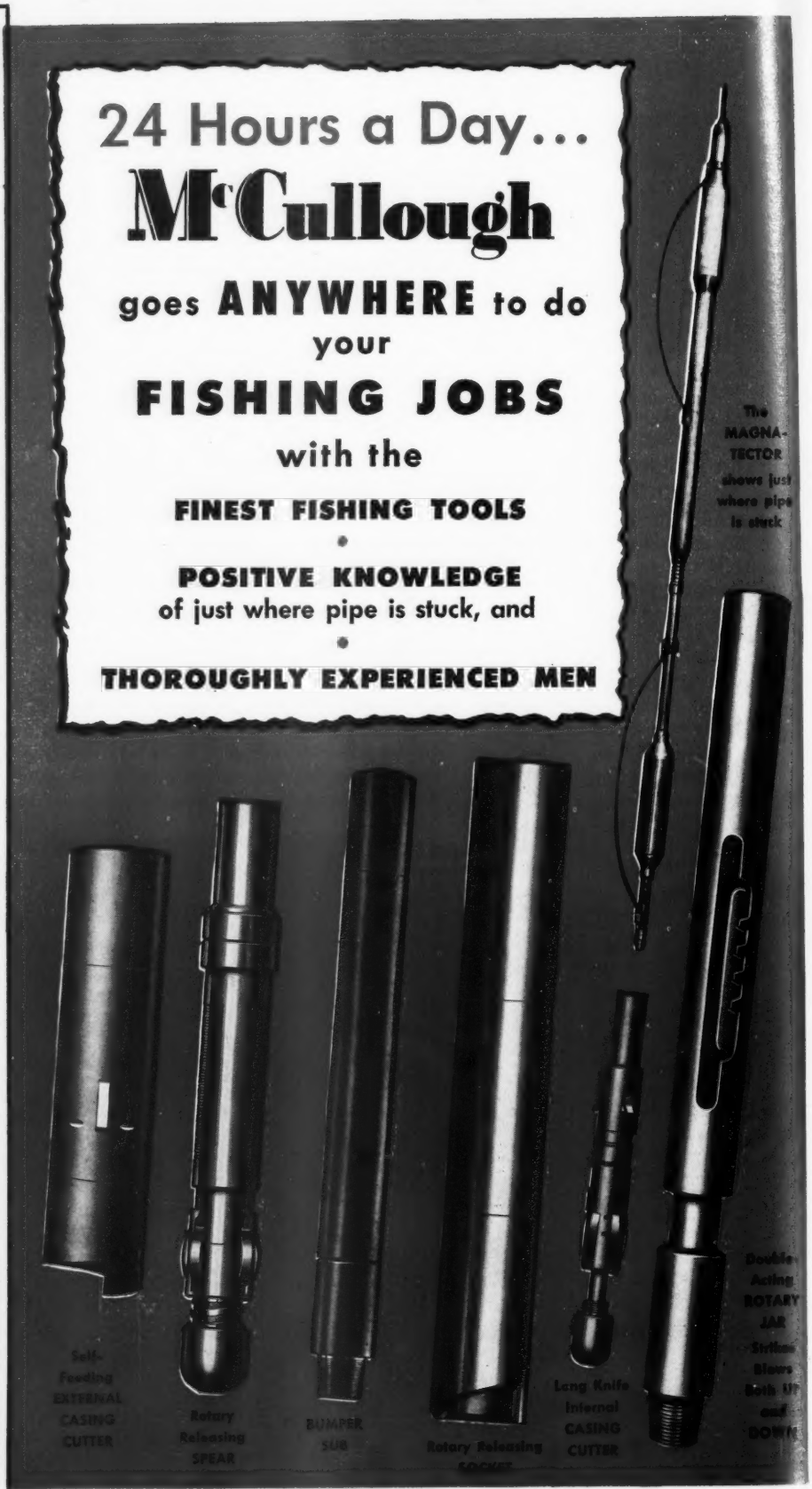
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depth is 10,400 ft. Having recovered fish, Texas Co. is spot coring at 10,637 ft. with J. V. No. 1 in Sec. 24-2n-23w. Standard, meantime, has begun swabbing operations with its McGrath No. 65-3 in Sec. 30-2n-22w. Original bottom is 9865 ft., and redrilled depth 9850 ft. The 7-in. casing is set at 8590 ft. Lloyd Corp.'s B. K. No. 1 in Sec. 23-2n-23w is a rig only.

## Elwood Try Digs

North of the Elwood field, J. W. Rice and Leonard Firestone are prospecting at 3000 ft. with North Elwood-Doty No. 1 in Sec. 11-4n-29w.

## Zaca Wildcats Grade Ground

Tide Water Associated is grading ground for two wildcats in the Zaca area of Santa Barbara County. They are Chamberlin No. 51 in Sec. 32-8n-31w and Luton No. 135 in Sec. 30.

## Orcutt Well New Pumper

Union Oil has completed Newlove No. 78 in the Orcutt field for an initial yield on the pump of 194 barrels daily from 3335 ft. No. 82 is rigging to pump from 4025 ft. The drill has been started in No. 76.

The company recently threw the rig on old California Coast No. 3 and the last remaining wooden derrick in the Orcutt field thus passed out of existence. The derrick was completed May, 1906. Frank F. Hill was general manager for Union in the field when the project was spudded and was on hand when the rig bowed out. Jack Reed, who aided in the construction of the derrick, also was a spectator at the last rites. Reed's 43 years of continuous service with the company distinguishes him as the company's senior member.

## Camarillo Test Spuds

Warren Oil Co., a new California operating organization, has spudded Janss Inv. No. 1 in Sec. 28-2n-21w in the Camarillo area of Ventura County. It is located on the Rancho Los Posas.

## Bolinas Area Try Drilling

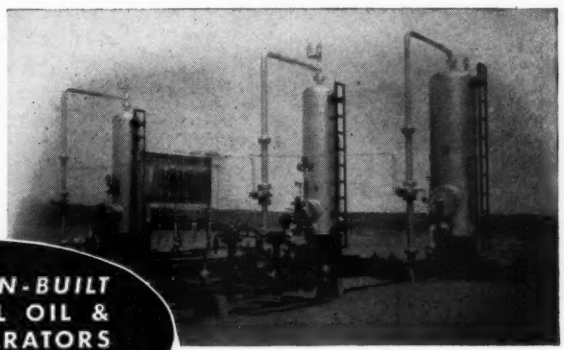
L. M. Lockhart, widely known independent operator, is drilling at 4545 ft. with his interesting wildcat test in Sec. 7-1n-8w in the Bolinas area of Marin County. The drill site is about 50 miles from San Francisco.

## Orella Try Spudded In

Shell Oil, which recently suspended Careaga No. 2-1 at 1763 ft., has spudded in its Careaga No. 2-2 in the Orella area in Sec. 36-5n-31w. The hole at last reports had been carried on down to 730 ft.

## Oxnard Job Still Tests

Signal Petroleum of California is continuing to test by stages its Schumate No. 1 wildcat explorer in Sec. 28-2n-21w in the Oxnard area. Bottom is 2725 ft., with casing cemented at 2260 ft.

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ANY OPERATING CONDITION

Whether it be low or high pressure, up to 4,000 lbs. working pressure—large volume of oil or gas, or small volumes—low temperature with freezing or high temperatures—sand cutting conditions—intermittent flow caused by heading or gas lift—high gravity or low gravity oils.

American-Built National Oil & Gas Separators incorporate all known principles of oil and gas separation and assure maximum efficiency and economical performance. Call on American engineers for hook-up data on the method of installation best suited to your particular requirements.

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*Engineers, Designers, Fabricators*
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MORE THAN FORTY YEARS STEEL FABRICATING EXPERIENCE

# For deep well drilling... this is THE RIG for me

"Looks like we have to go deeper and deeper to get oil these days, and I'm equipping myself to handle deep drilling. It takes a real rig to go down 12,000, 13,000, and perhaps 15,000 feet. The Wilson SUPER TITAN can do that and plenty more. It's equipped with four engines which means enough power to go to 20,000 feet! and the size . . . it's built to stand the gaff and strain of extra deep drilling. But most important of all, IT'S A WILSON . . . that name means a lot to me! Wilson Rigs have always been tops."

Investigate now . . . with oil wells going w-a-y down, you are going to need the extra power and strength of a Wilson SUPER TITAN Rig.

RATED CAPACITY OF SUPER TITAN RIG

| | With 3½" Drill Pipe | With 4½" Drill Pipe |
|---|---|---|
| Super Titan 56" Drum..... | 17,500 ft. | 14,000 ft. |
| Super Titan 66" Drum..... | 20,000 ft. | 16,000 ft. |

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# Personalities IN THE NEWS

## White Truck Promotes Knapp and Grizzell

Two important personnel changes were recently announced for the Pacific Coast operation of The White Motor Company by Wilson D. Patterson, Regional Manager.

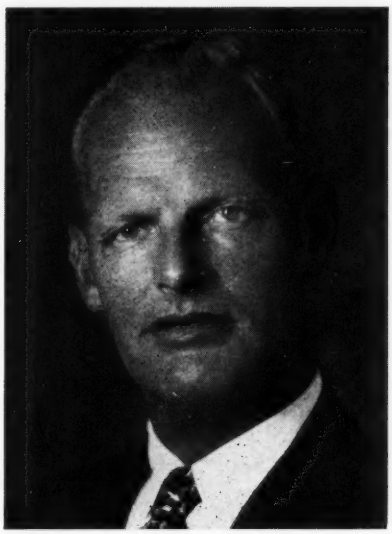
Joe C. Knapp, Business Manager of the Los Angeles Branch has been transferred to the San Francisco Branch as salesman to handle the assignment formerly under Jack Lambrecht. Knapp's promotion is the result of more than 25 years of service with the Pacific Coast region where he has served White in many capacities. This experience gives him a thorough background for his new assignment. Knapp first joined White's Salt Lake Branch in 1922 from where he was transferred to the Portland Branch in 1924. In 1926 he came to the Los Angeles Branch as District Accountant and soon became Credit Manager. Since 1940 Knapp has been Business Manager of the Los Angeles Branch.

Tom N. Grizzell, who has served as Credit man for the Los Angeles Branch of White for the past five years, has been promoted to the position of Business Manager, succeeding Knapp. Before his White association, Grizzell was successively with Forest Lawn, handling credits, and General Motors Acceptance Corporation in New Orleans and Cincinnati.

It was announced simultaneously by Regional Manager Patterson that Jack Lambrecht and Bill Crawford of the San Francisco sales department have purchased the interests of the Henwood Motor Company of San Jose and been appointed White distributor for that area. The newly formed company under the two former San Francisco Branch men will be known as the C & L Motor Company.

## Pyle Heads Continental Consolidated

Howard C. Pyle, vice president of the Bank of America in charge of oil loans, has resigned and joined the Continental Consolidated Corp. as president.



Howard C. Pyle

He succeeds Robert V. New, who together with H. F. Ingold and the Harwood Foundation recently sold their entire stock interest in the so-called Continental Companies at Long Beach to Continental Consolidated. The Continental organizations are made up of Continental, Continental Development and Continental Northern and Southern Corps. These companies at present have 63 producing wells in the extension of the Wilmington field. In addition, there are 135 wells yet to be drilled to the Ranger zone. The jobs are directionally drilled from the west bank of the Los Angeles flood control channel, extending under the city of Long Beach.

Mr. Pyle for many years was with Union Oil as assistant chief petroleum engineer and geologist, and later as chief production engineer.

As a Lieut. Col. during the war, Pyle served on the staff of General Eisenhower in charge of petroleum supplies for the fighting front. Later he was loaned to the staff of Field Marshall Montgomery during the Normandy invasion.

New directors of the companies in addition to Pyle, are Lloyd S. Gilmour of Eastman Dillon & Co., Milton Linden, vice president of the companies, G. J. Levington, and E. C. Simmons, who will serve as chairman of the board of directors. All of the stock of Continental Consolidated Corp. is owned by the latter.

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Mrs. George Atha, wife of the West Newport Beach operator, is recovering satisfactorily from an illness that kept her under treatment for some weeks in the Hospital of the Good Samaritan in Los Angeles.

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Ernest Cole, carpenter foreman and field inspector for General Petroleum, who is just rounding out 20 years service with the company, came to California from Beatrice, Nebraska, in 1922. He once was a noted semi-professional ball-player.

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Wally Curtis, popular manager of advertising and public relations for G. P., is on a well-earned vacation on the spacious San Ysidro Rancho near Montecito in Santa Barbara County.

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"Analysis of the News" by Rex Miller is a new Union Oil radio program. It is heard over the Mutual-Don Lee broadcasting system Monday through Friday between 7:30 and 7:45 a.m. Miller, a former Rhodes scholar, has gained prominence as an editor and foreign correspondent.

To Lieut. Governor Goodwin Knight went the honor of twirling the big 24-in. valve at the Santa Fe Springs terminus of the Biggest Inch and unleashing millions of Btu's of Texas gas to Southern California consumers. He praised the men who were responsible for bringing Texas gas to California, particularly C. O. G. Miller, Franklin S. Wade, Paul Kayser, LeRoy M. Edwards and Arthur F. Bridge.

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After three weeks in New York and Washington, D. C., Reese H. Taylor, president of Union Oil, is back with his family in their Huntington Hotel bungalow.

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Robert S. Lytle and Leigh Battson were among those sponsoring the Winter Ball at the Beverly Hills Hotel, which was given as a means of raising funds for a new wing for St. John's Hospital in Santa Monica.

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Richard (Salt Water Dick) Bramley, Shell's salt water line pumper in the Coastal division, for years played championship soccer and has served as president of the Ventura Night Ball League and member of the Ventura Athletic Council. Dick was born in Sherwood Forest, famed in song and story about Robin Hood.

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The exploratory play recently launched in the Temblor area of Kern County under the banner of Ferguson & Bosworth is based on geology worked out by Glenn Ferguson, widely known geologist and paleontologist.

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J. W. Sorrels, leading Mid-Continent independent operator, heads the Warren Oil Co., which is drilling its first well in California near Camarillo. B. O. Thralls is vice president and superintendent, and R. W. Jeffers, secretary-treasurer.

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William Tallman of Newport Beach has asked the court to determine his rights about pumping a well that is dribbling oil in his backyard. In a Superior Court suit filed at Santa Ana in Orange County, he claims that under a city ordinance forbidding drilling oil wells, he has a right to pump oil from this old well that was abandoned by the Basin Oil Co. in 1932. It was evidently given up at that time because of its non-commercial aspect.

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Ashley DeWitt, Los Angeles independent producer, divided $1000 among Shirleen and Joan Branson, Peggy Slusher, Jackie Irwin and Martina Holloway—Ontario high school girls—for finding the body of missing Dr. William E. Keating near Lake Arrowhead. DeWitt, whose daughter is married to Keating's brother, Dr. Vincent Keating, offered the $1000 reward for information concerning the disappearance of Keating from Arrowhead Lake Lodge October 21.

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Honored by his many friends on his 63rd birthday was James J. Donahue, head of the Caltex Boiler Works in the Signal Hill field. He has been actively engaged in the oil well supply business on the "Hill" since 1929.

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S. W. Reynolds spoke on "Fractured Rock Production on the West Side" at the meeting in Taft of the San Joaquin Valley chapter of the American Petroleum Institute. Max Steineke, Arabian-American Oil Co., discussed "Experiences in Bahrein and Arabia."

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Thos. M. Blake, veteran California operator, has leased approximately 12,000 acres of prospective oil ground in Platte County, Wyo.

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Stark Fox, manager of public relations for the Oil Producers Agency, has returned to Los Angeles from a short vacation in San Francisco and the Bay area.

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Peak Oil Tool Service, Inc., recently incorporated, is maintaining offices at Taft, Bakersfield and Santa Maria. J. B. (Bud) Peak is president of the company, Lois Peak, vice president, and H. S. Sibley, secretary-treasurer.

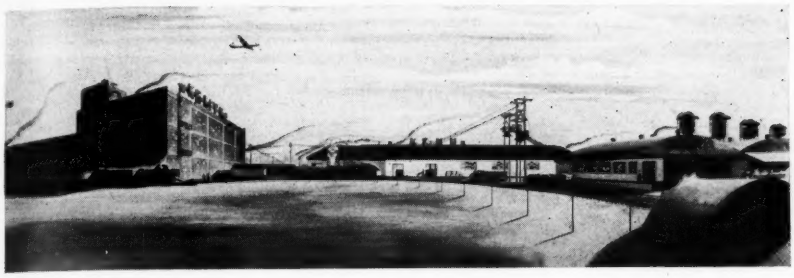
## Visual Analysis of Action On Bubble Trays

(Shown at CNGA November Meeting)

Realizing that very few engineers have had the opportunity of actually seeing a bubble tray in operation, C. F. Braun & Company constructed a two tray column entirely of lucite, and photographed the column while in operation under various vapor and liquid loadings, and with different types and arrangements of bubble caps. Some 325 members of the California Natural Gasoline Association and their friends met Thursday, November 6th, at the Rio Hondo Golf Club to witness the first Southern California showing of the film. Art Whistler, Process Consultant, commented on the film and conducted a question and answer period after it was shown. C. W. Leggett, Research Engineer, made running comments during its showing. The action was photographed by Marshall LaCour. All three men are with C. F. Braun & Company.

One thing which the film makes clear, Whistler stated in his comments, is that entrainment is not solely a function of superficial shell velocity. Such factors as cap design, cap spacing and riser velocity must also be considered. It was also apparent from the film, he stated, that vapor blow tends to occur near the overflow weir with round caps. This is because the submergence is less at that point. When rectangular caps are used a phenomenum called "Hydraulic Jump" occurs, and results in the minimum liquid height occurring at a point near the downpipe. Hence, with rectangular caps, blow by occurs near the down pipe.

CNGA President, Frank Colton, stated that the 325 men present set a new record for CNGA monthly meeting attendance. The previous record of 275 was established some four years ago at a joint meeting with the Southern California Section of the American Society of Mechanical Engineers.



## New Kelite Plant is West's Largest

On November 1st the work of moving all Kelite manufacturing operations to the company's new Los Angeles plant was completed. The new plant is situated on seven acres of land within a few blocks of the Los Angeles City Hall. It is on the main line of the Union Pacific Railroad, and each unit of the new plant has its own railroad siding and truck loading dock.

The main building for the manufacture of Kelite Industrial Chemicals contains 65,000 square feet, and every modern facility for the processing and manufacture of industrial cleaning materials.

All products requiring packaging, and the company's popular household cleaner, KENU, are put up in the adjoining Kenu plant which contains the latest automatic pneumatic packaging machinery. Adjoining the Kenu plant are two buildings housing the company's subsidiary, Tivit Products Company, which manufactures the Tivit Steam Cleaner, Radiator Flusher, Car Washer, Tivit Tanks, and other cleaning equipment for industrial use.

There is also a large tank farm with facilities for underground and above-ground storage.

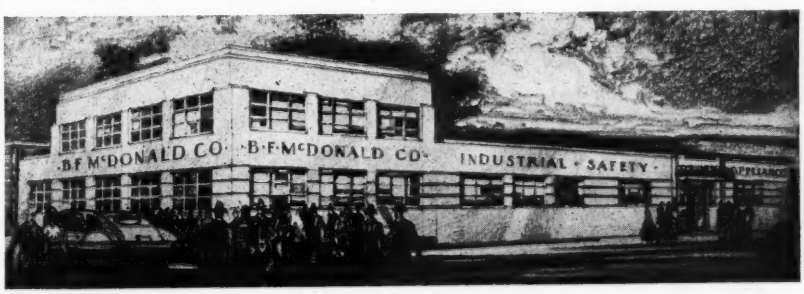
"Our splendid new plant will increase the efficiency of our company and will permit greatly increased output of Kelite materials," declared L. C. Sorensen, President of Kelite. In addition, the modern new plant of Kelite Products, Inc., in the Lincolnwood development in Chicago will be completed in December.

## Safety Firm Purchases Building

B. F. McDonald Co., manufacturers and distributors of industrial safety equipment, ,have just acquired from the Orowheat Baking Co. the entire block fronting on South Hoover St. between 51st and 52nd Sts. in Los Angeles. The McDonald Co. has occupied the property for the last several years under a lease.

In announcing the purchase of the property, B. F. McDonald, president of the firm, released plans for enlarging existing facilities at the plant. Offices will be moved to the second story of the building, facturing space on the ground floor. facturing space on the ground ffoor.

Founded in 1932, the B. F. McDonald Co. is said to be the largest manufacturers of safety equipment in the West with branches in San Francisco and Houston.



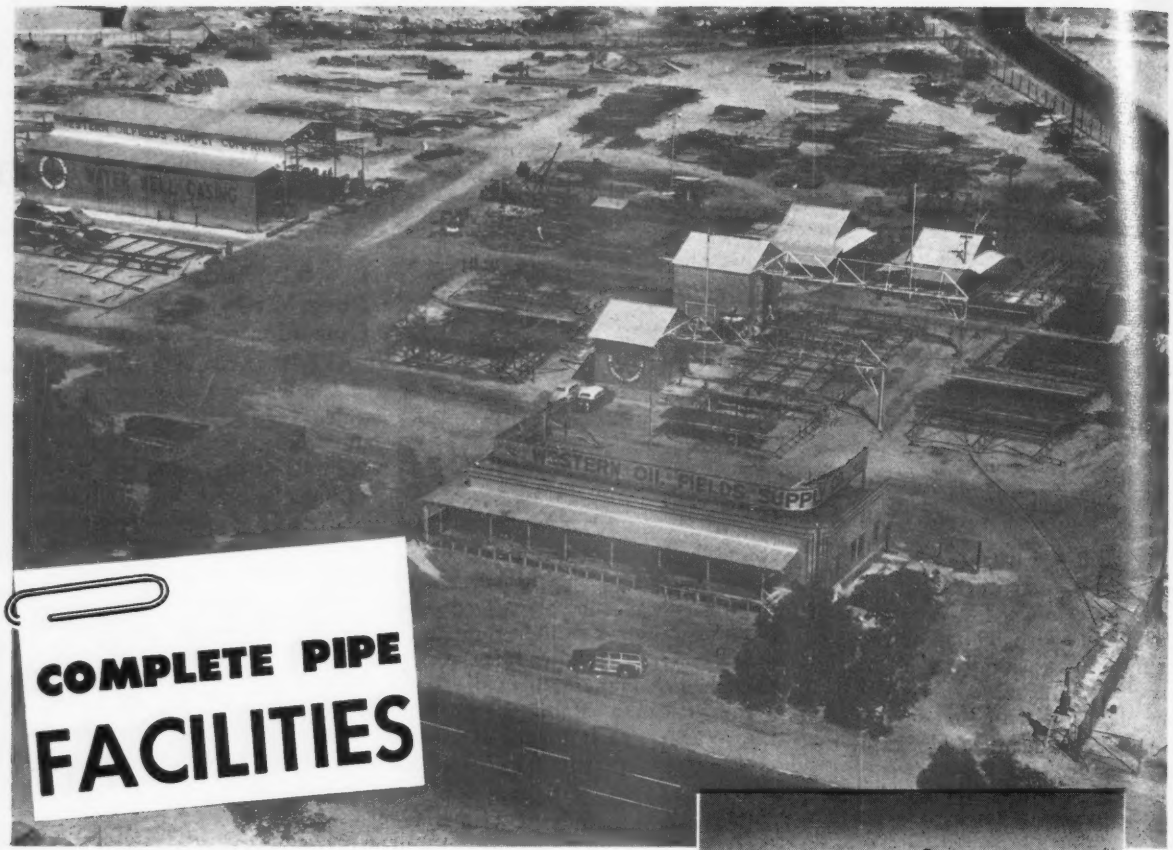

## D + B Develops Stainless Steel Deep Well Pumps To Combat Corrosion and Abrasion

D + B Division of Emsco Derrick & Equipment Company of Los Angeles, California, and Dallas, Texas, announces the manufacture of a completely new line of deep well plunger pumps for corrosive and abrasive pumping service. Known as the D + B "Endurall" line, these new pumps are manufactured from a special stainless steel alloy which is highly resistant to both corrosion and abrasion. Comprehensive field tests under the most severe conditions showed that D + B "Endurall" pumps doubled, tripled, or, in some cases, even quadrupled the production life of conventional pumps.

The new D+ B "Endurall" pumps are available in both rod and tubing sectional liner type pumps in a wide range of sizes and lengths to meet most pumping requirements. Liners, plungers, balls and seats, cages and miscellaneous fittings are also available for standard pumps now in service. All pumps and parts conform fully to A.P.I. specifications.

## Coalinga Try Cores

In the Northeast Coalinga area, Sharples Oil Corp. is about to core Fleishacker No. 85-1 in Sec. 1-19s-15e, Fresno County. Present depth is 8590 ft. Lillis No. 88-18 is drilling at 5352 ft. Location is in Sec. 18-18s-15e.

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**COMPLETE PIPE FACILITIES are available at WoSco's Bakersfield 14 acre pipe yard and include:**

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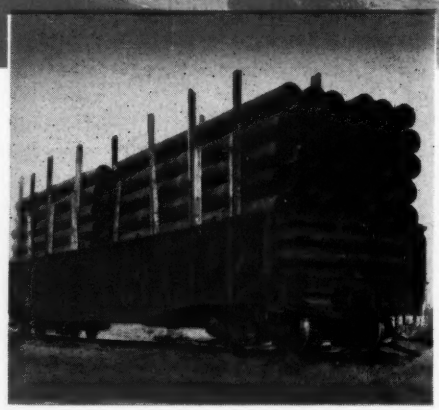
- **RENTAL PIPE LINES for water, gas, or oil in any quantities. WoSco's crews install the Victaulic coupled pipe to save you time, effort, and money. (Rental pumps available too).**
- **PIPE AND CASING SALES DEPT. for the sale of casing, conductor pipe, structural pipe, pipe lines and, in fact, pipe for every oilfield need.**
- **EQUIPMENT for wrapping and dipping pipe with protective coatings.**
- **WELDING FACILITIES with the best equipment used by men who are oilfield welding specialists.**

**Whatever your pipe needs.....WOSCO DOES IT!**



**WoSco's pipe fabrication shop supplies thousands of feet of oilfield conductor pipe to oil companies. Skilled workmanship and a knowledge of oilfield requirements enable WoSco to provide any size conductor you want when you want it. WoSco will save you money by rolling good used tank steel to make your pipe, if you so specify.**

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WESTERN OILFIELDS SUPPLY COMPANY — WOSCO

# WESTERN OILFIELDS SUPPLY CO.

# Kern County OIL NEWS

UP CRUDE . . . this was the talk of Kern County at press time. Even the lowly "heavies" North of the River (Rio de San Felipe) had a five cent boost. Much of this is under 19 gravity . . . sales were $1.66 bbl.

UNION OIL COMPANY gave it the pitch . . . but in some "degree gravity" over 24, the "upping" was not more than a cent. This needs dating October 29.

AT PRESS time in Kern, the Texas Company nodded its bid after Standard of California had followed Union's suit . . . (no pun intended).

COMPLACENT Kern took it in stride after the first **"what do you know"** morning salutations. Price seems to vary all over Kern from 1 to 14 cents per barrel . . . but—

OTHER THINGS seem of equal importance . . . and equal complacency . . . ELK HILLS' new story and its bid for 7000 more acres of reserve saturated oil . . . All For Dear Old Navy . . . "Okay," say they.

BUT THE COUNTY Board of Supervisors is not so happy unless something "in lieu of taxes" is presented as a token of the Nation's security needs . . . for say they in effect . . . "security begins at home" . . . and it is important that some of the school kids and other things including private enterprise have some of that security that makes security certain. Other companies will have to pay to make up the losses.

HOWEVER, at last writing it would appear that many a Kern-itewig would relax and enjoy it with "Anchors Aweigh." Complacency . . . is King. All that the relinquishing oilwigs want is an easement on their increased taxes if the navy takes over . . . perhaps the "in lieu" will be in process and nobody will be hurt. Hope deferred.

**DOWN 20 thousand barrels** from the national production picture in one week over another in early November excites more news in Kern as the U.S. needs increase. Texas is expected to make up the loss. Rumor.

LEAVE IT TO Stanley Abel to start something. Stanley started the wage solution, for the oilworker at Coalinga and Taft in the early 20's after World War I. He has made copy ever since. Later he started "civic-improvement-cost-worry" for the oilworker and oilwig alike. National housing was next after being voted out of his 24th year as County Supervisor. Now he has started worrying the speedsters on U.S. 99 . . . "Pacific International Highway." He is doing more than that . . . he is concerned with 99's improvement and double laning. He is making the "dish-it-outers" unhappy by helping the greatest need for the greatest number. "U.S. Highway 99 Inc." this is the new march for good.

SUNRAY last month had smooth sailing. This month the minority stockholders have sought demurrer to show cause. No highway to any success ever ran smoothly without paving the way and smoothing out the rough spots and protecting the shoulders which carry the burden.

KERNOILWAG at the Friendship Train on "Friendly Southern Pacific's" standing platform kept calling it the "Feed 'em" Train. First we thought it was funny, but later we found out the big donor had been up all night bringing in a well at Edison and that grapefruit juice without coffee so early in the morning (6:00 am) had burping effects. Freedom Trains which are next, might include a call for food since most areas in Kern over subscribed once again the amount. Oilmen take notice.

BRISK drilling continues in Kern although the national loss of some 768 wells as against 739 in one week had a little if any effect here. Wildcat figure as you saw it was 121

**KERN COUNTY OILMEN: Affiliated with the National Association of Oil Well Drilling Contractors, these Kern County (we claim them all) oilwigs who really make something happen, attended the National Convention recently held in Long Beach, California. We covered for "COW," too. Seated: K. L. Kellogg of Long Beach, president of the state chapter; GENE REID, Convention Registration Chairman; and WALTER BUASS, of Kern County. Standing: L. A. Miller of Miller & York, F. L. SHEPHERD and F. A. YORK, all of Kern County. "Give them a hand."**

to 111 the same week. But the runs to the refinery was most heartening 5,165,000 to 5,167,000 . . . only slightly off the same week. However, these are trends . . . it may be the public is also putting padlocks back on its pocket book . . . the oil operators that is.

GOVERNOR WARREN did say over the mike at the "SP" station from the Friendship Train, that he went to school, "right around the corner over there." He also told us that he was sorry he could not stop over for the day and see the Rodeo. And we said words to the effect that we wagered he should, because he certainly looked, talked and acted like he meant it. We think he did . . . something in his voice just kind of sold us on the idea . . . and we defy one to talk us out of it . . he must have meant it . . . no one could talk like that and not mean it.

DICK SPERRY of big GEEPEE came up one day this month and talked of many things . . . "of the Silver Anniversary of the Kern County Bank" . . . Fred Owen its president . . . Harry Crossan its "VP" and generalissimo. The long years when people used to come in and draw their money out . . . count it and put it back in . . . just to see if the bank had it. Then the lean years when the tables were reversed . . . when people took out from some other bank and put in with Fred and the old State Bank then . . . just because they knew Fred.

"NO, IT IS NOT TRUE that the eclipse of the sun had anything to do with the production of oil in Kern County." A reply to an inquiry just received from a holder of oil lands living in the East.

IN 1917 there were 371 babies born in Bakersfield or Kern County. This was 88 more than 1916. This year there will be over 5000 babies born in Kern which will be about 5% over 1946. (Guessing is ours) 'Tennyrate 500 of them will be oilwigs children's babies.

OVER AT TAFT the populace was excited as its hometown made big national news. Dr. Robert Dykes and wife had narrowly escaped death as their plane cracked up in a crash landing over Wyoming and Utah. Dr. H. R. (Hilly) Dykes has been an oilman's friendly physician and surgeon "lo these many years," in approaching a half century of medical success among the oilmen and oilworkers of the great Westside at Taft. His faith in his boy's survival helped find him in the nick of time. That same faith was applied to many oilworker's child in sickness which made it possible for parents to persevere for its recovery. It happened to us . . . we ought to know. The DYKES, and there are many, hail from Alabam.

NOBODY likes facts . . . especially if the person has seen them once . . . BUT look at California Oil wells . . . 27,442,422 barrels of crude for September. This is an average according to API of 914,-747 b/d. However, this is a drop of 2937 b/ds over August. KERN representing one third of the state's production is bound to notice this. Half of the activity is San Joaquin Valley located. Kern River and Lost Hills turned in the Kern County high.

TAFT is proud to report that its Midway Sunset and Buena Vista areas are the heaviest producers of the great San Joaquin underground oil lake.

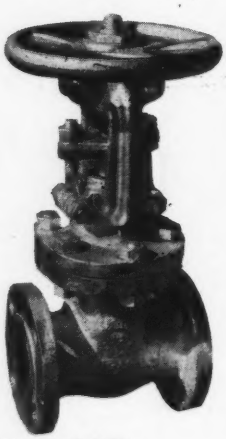

HARD FACING of VALVES

a SPECIALTY at JOHNSON

Long known in the oil industry for expert, reliable work in the repair and maintenance of all types of valves, Johnson now adds another important service . . . complete facilities and trained personnel for hard-facing of plug valves. The newest equipment, operated by highly skilled technicians who SPECIALIZE in valve work, assure service that can be depended upon.

* * *

Every man at Johnson is proud of the Johnson reputation.



"ALL WORK GUARANTEED"

Johnson VALVE SHOP

BAKERSFIELD PHONE 2-5266

A Complete TRUCKING SERVICE for the OIL INDUSTRY

Local and long distance hauling of petroleum products, drilling equipment, heavy machinery.
For the solution to any oilfield trucking problem . . .

PHONE BAKERSFIELD 6-6517

OILFIELDS TRUCKING CO.

1601 UNION AVE., BAKERSFIELD

FORTY YEARS AGO the AF of L took steps toward establishing an 8 hour working day in the county, according to news report reviews of that time.

GEORGE HABERFELDE from San Diego 50 years ago was promoted to Kern County as he became its agent for the Singer Sewing Machine Company. Even then it seems that Kern was a bright spot for business.

AT PHOENIX, Arizona last month the Department of Interior had many an interesting representative in attendance. It was the 13th annual meet of the "NRA" (National Reclamation Convention Association) to us. But the subject of Tidelands, its oil and the subsequent resources under the dry bed channels of navigable rivers scared the pants off farmers (who in Kern County are largely landowners and have a couple oil wells on each 160 acres). Even the water is not exempt from ownership by Uncle Sam.

OHIO's W. A. Johnson out at Coles Levee near Taft was seriously hurt. According to news items and words from friends, say he has been transferred from Taft Hospital to his home in Bakersfield.

COUNTY ASSESSOR J. E. (Josh to us) Hanks has announced that Mr. Albert Charles Fritsche an oil field analyst has been employed as the petroleum and mining engineer for the County of Kern. Mr. Fritsche's wealth of experience well qualifies him for the important post in our opinion.

CARDS IN OUR POCKET this week end indicated that we had contacted from Shrimpton Equipment Company Oilfield and Refinery Equipment W. R. (BILL) RUNBECK, sales engineer and a nice guy looking for general information; A. C. GUSKE, Shell Oil Company; Robert C. Patterson, BELRIDGE; H. Æ. (Bert) Bivens, Neilson Pump Division of Oil Well Supply Company; Coalinga-Kettleman, Chapter API, an invitation to a dinner dance at the Polvadero Country Club; R. L. (Bob) Rigsby of "HOMCO"; VICTOR INDIG of San Francisco; T. J. KROETCH of Oakland, who sells Sherwin Williams paint.

BY THE BY Alda-Ruth Shop's Ruth Neufeld is a friend of the oilwig and can make a shirt ala Western that will simulate a grand cowhand that most of the Kernoilmen appreciate.

SPEAKING OF cowmen, mostly of oilmen, the CCA (California Cattlemen's Association) will hold the first state convention since the Civil War in Bakersfield December 12--13 El Tejon Hotel.

THIS REMINDS US that Mert Weatherwax of Caliente restrained the committee from sloganing the confab with "1847-1947 — a 100 Years of Cow Prosperity" . . . said he, "for a long time before oil came in the years we were not so prosperous". "We might say," he continued, that we had a hundred years of livestock industry sometimes good and lots of times bad."

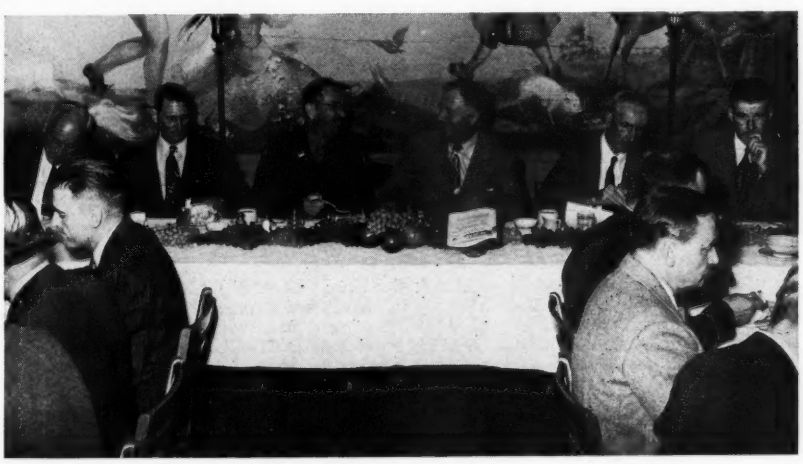
FORREST P. BARRETT, assistant director of school and college service, UNITED AIR LINES, pays a lot of success respect to the oilmen who use the plane most in Kern's area.

OWEN JOHNSON'S valve shop trade continues in its many services and sales. Owen realizes that it takes friends to do business and that the old customer is always right . . . and even sometimes the new one in most cases . . . to quote a diplomatic interpretation of his success by one of his contemporaries.

MACHINERY SERVICE COMPANY'S Oilfield Mechanic ART HODGE and JACK SMITH are one and the same according to both of them. Figure this out. Their card says Power and Steam. So far we have not figured out which is power and which is steam. Anyway the oil folks around these parts treat them like they were one of them . . .

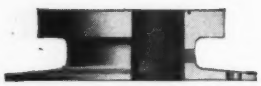
CHARLEY MANLEY. We like that name for one reason in that we know there are two ley's in the sum total. Well anyway even if Oil Field Construction Company goes marching on, Charley stops to have a human chat with folks. He is, of course, interested in the success of Tiny's Waffle Shops in Kern . . (he is not interested in San Jose so much) but on old US 99 too, where Melody Bowl can feed a 1000 people if Manager Miller is willing . . . Charley looks with favor. First he fed 800 potatowigs. Then he said, "Never Again" . . . but he weakened to the CCA and its 1200 livestockwiggers . . . we hope he weakens again . . . Reason: we want to do it in oil . . . Next year, 1948, we want to get the API and fellow travelers here.

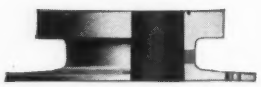
HARRY PHOENIX is unhappy. State Highway Department is giving July 1 as opening date for the Tehachapi Highway or U. S. 466, Keene-Tehachapi section of the road. Harry planned his franchise budget savings a year in advance because this highway should on paper look like completion from a year to six months ahead of new schedule time mentioned above. Meanwhile by the looks of OIL-



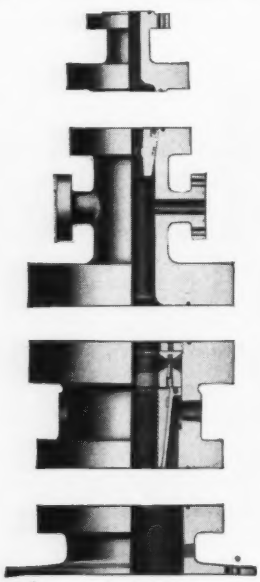
**KERN OILWATERWIGS make plans with General Wheeler, (third from left) relative to Isabella Dam which will affect oilman and farmer alike. Left to right: W. R. WOOLLOMES, Chairman Kern County Board of Supervisors; Congressman ALFRED J. ELLIOTT; GENERAL WHEELER; F. R. Kalloch, President Kern County C. of C.; W. H. Hitchcock, Director (18 years) Kern County C. of C., and Frank Stockton, farmer-geologist, Director and Chairman Water Committee Agricultural Council. Foreground, left: Charles P. Salzer, member of Board of Supervisors. Right: WALTER KANE, General Manager, Bakersfield Californian.**

# These A.P.I. Standardized WILSON CASING and TUBING COMPONENTS cover all landing contingencies





**1** Landing Bases are available in two types: "Flanged" (illustrated) for high pressure hookups, and "Split" for lower pressure requirements and easy assembly within cramped cellar areas. Water string is welded in both types directly to landing base.



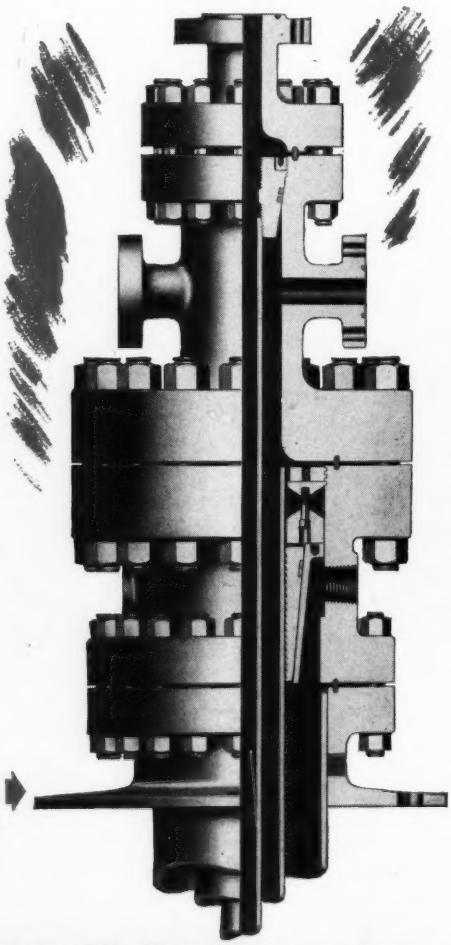
**2** Wilson Casing Head, No. 1075 is bolted directly to the landing base flange. Full opening of WILSON Casing heads permits easy passage of bit and drill pipe after bowl is installed... landing and packing off of second casing string is easily effected simply by inserting slips and unitized packing element, then cutting off casing to correct height.

If a deeper hole requires a third casing string, an additional spool is stacked and bolted by means of a mating flange. Note, each string is supported on an individual set of slips—each is packed off separately. Mud outlets are provided on all heads as an added safety precaution.

**3** WILSON No. 1086 Tubing Head with No. 1040 Reducing Spool is equipped with flanged outlets, assuring tight, pressure-proof connections. Tubing is hung on its own tapered sleeve, automatically packs off and is retained against gas pressure lift by a compression nut.

## *Suitable for 1, 2 or 3 String Suspension*

**WITH WILSON LANDING ASSEMBLIES you're prepared for any contingency—unknown, unexpected pressures, or a change in number of casing strings—because these standard components can be quickly assembled to accommodate unpredicted casing requirements. Designs are available in 3 working pressure ratings: 2000, 3000 and 5000 p.s.i. Each design is tested at *double* rated working pressure, furnishing an adequate factor of safety even for high pressure wells. All designs conform to A.P.I. Standards, permitting quick assembly of any required hookup—without special machining or use of adapters.**



**4** The completed Type 1151A, 2-string WILSON LANDING ASSEMBLY, illustrated right, has a test rating of 10,000 p.s.i. Other types are available for lower pressures with a choice of flange or screw outlets. **WRITE FOR FREE CIRCULAR featuring complete Wilson Landing Assembly designs.**

*There is no greater Assurance of Safety than a WILSON....*

**WILSON**
**OIL TOOL CORP., LTD.**
816 N. Ventura Ave.
**VENTURA, CALIFORNIA**
Phone Ventura 5407

FIELD TRUCKING COMPANY backlog the firm is going to make hay as the sun shines down upon a lot of other contracts not requiring highway facility completion.

DICK STRICKLEN of the Motor Truck and Sales was also on the Panorama Parade. Quite fearless and unafraid, Dick led the way and pointed up the problem. His successor was J. H. (Herb) McMasters, well named as he became the master of metropolitan Bakersfield's great rural-urban need in Northeastern environs.

GENERAL PETROLEUM'S Dick Sperry who began life with GP 31 years ago forgot to tell us of the fall of 1917 when in Lost Hills after three days of drilling his firm hit oil sand. Also on the beam went six wells in 30 days.

ISABELLA DAM will change Kern County maps but the oilfield areas will be continued. The present oilmen interest is purely recreational. This reminds us that a new oil map is available now in Kern County.

ONE OF BAKERSFIELD OIL SCOUTS informs us that one of the boys in the industry has "switched to oilesky, a by-product of crude.

AT COLORADO SPRINGS a person who spoke of the oil industry suggested that it be reminded of recent surveys which indicate that padlocks have begun their appearance on pockets and pocket books. He suggested a title, "We Cannot See The Oil On Account Of The Derricks." He was looking back.

WEDDING BELLS "have rung" for no one this month that we know of. No one has been married. No report comes in for very much gossip. Something must have happened. What was it.

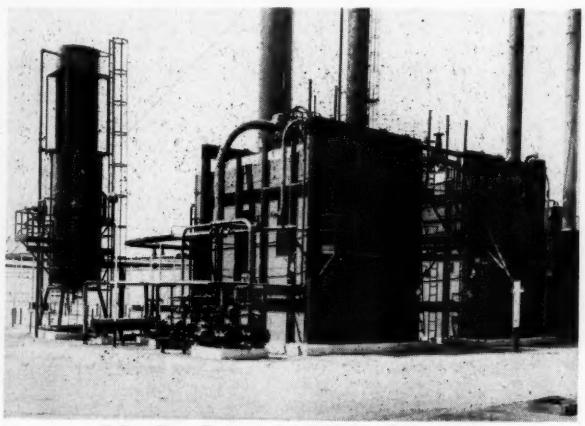
OIL GOLFERS have recently sparked a contest with Fresnoans. Acting in grand host style . . . but "pulling no drivers," the stockdale group beat up their unlucky guests in a terrible fashion. A return match was scheduled by the Raisinites in order to inflict revenge, ala home-course method.

STANDARD OIL OF CALIFORNIA awarded a 30-year pin to Antoon Hulsebos of Buttonwillow one day last month. It is one of 128 award pins for October.

MOST OILMEN have forgotten that in 1907 Governor Gillett declared a bank hoiday, and that was just exacty forty years ago. History repeats.

PANORAMA SANITATION DISTRICT is the new name for the Northwest Greater Bakersfield area which has been waiting for domestic waste disposal plans for over ten years. Many oilwigs live in this district. In fact the leadership in a recently successful election despite many well organized attacks against the plan, by persons without certain facts.

"PETROLEUM INDEPENDENT" . . . oil people ask for nothing . . . they do their own chamber of commerce work . . . they toil and spin . . . they drill and produce . . . test and develop . . . market and advertise . . . no quarter is asked, no quarter is given. "Sewerage service does not a metropolitan city make." When the petrolwigs of Panorama Partition earn themselves a right, they will petition to come into the greater incorporated limits, say they. They are all greater city minded, but right now it's health and sanitation they desire. Next to this is Culture and Recreation . . . business and industry will follow.

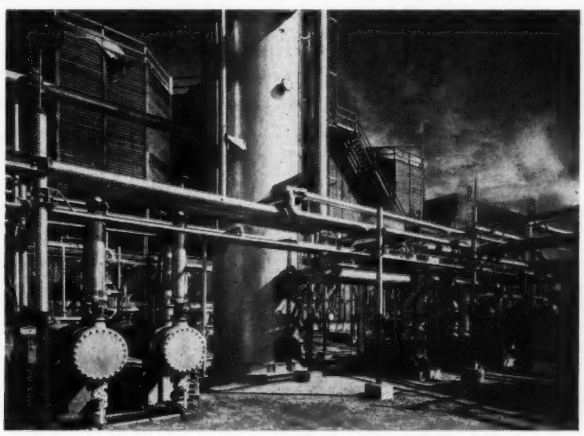
Boiler Plant Equipment installed at Bakersfield

**BOILER PLANT and**
**Compressor Plant Construction**

**Completely automatic Oil Heating Plants**
**Johns Manville Insulation**
**Brick Work ★ Concrete Work**

C. E. MANLEY, Manager

**OIL FIELD CONSTRUCTION CO.**
**of BAKERSFIELD**
Highway 99 West of Circle Phone 3-0750



MODERN LOW PRESSURE ABSORPTION PLANT

**NATURAL GASOLINE PLANTS**
**PUMPING STATIONS**
**REFINERY PROCESSES**
**COMPRESSOR PLANTS**
**GAS & OIL TREATING PLANTS**
**INDUSTRIAL CONSTRUCTION**

**J. B. GILL COMPANY**
*ENGINEERS AND CONSTRUCTORS*
LONG BEACH, CALIF. P. O. BOX 851
LOS ANGELES, CALIF. 408 SO. SPRING ST.

# California Oil World's Monthly Summary

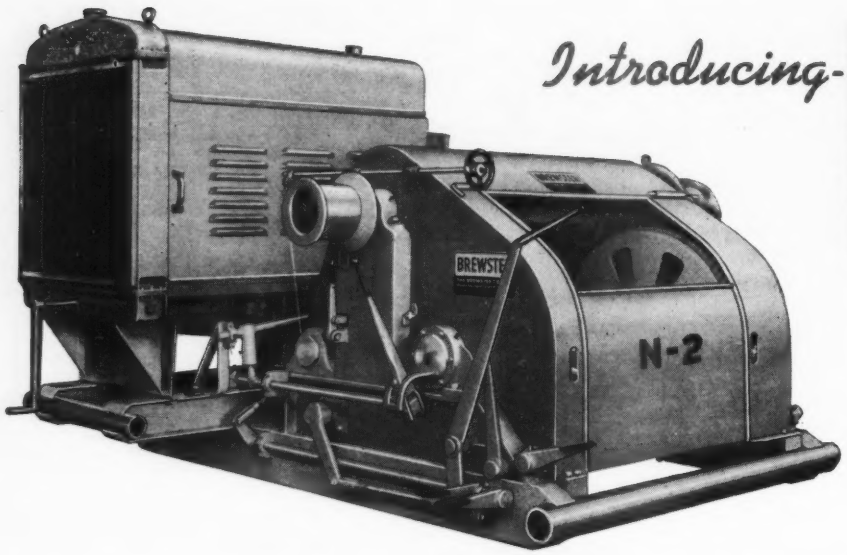
DEVELOPMENT—PRODUCTION—SUPPLY & DEMAND
PACIFIC COAST TERRITORY

## TABLE I—CALIFORNIA DEVELOPMENT—PRODUCTION

| | SEPTEMBER, 1947 DEVELOPMENT | | | | PRODUCTION | |
|---|---|---|---|---|---|---|
| | Active Drilling Wells | Oil Wells Completed | Initial Production B/D | Oil Wells Completed First 4 Months | Daily Average September 1947 | Daily Average September 1946 |
| **SAN JOAQUIN VALLEY REGION** | | | | | | |
| Ant Hill | | | | 1 | 1,409 | 1,384 |
| Antelope Hills | | | | | 1,401 | 1,569 |
| Bellevue | | | | | 317 | 298 |
| Belridge—North | | | | | 4,833 | 5,065 |
| Belridge—South | 1 | 4 | 229 | 24 | 4,974 | 10,218 |
| Blackwell's Corner | | | | | 158 | 228 |
| Buena Vista Hills | | | | 5 | 47,345 | 38,782 |
| Canal | | | | | 1,964 | 912 |
| **Coalinga Group** | | | | | | |
| Eastside | 2 | | | 6 | 15,208 | 16,485 |
| Oil City | | | | | 87 | 89 |
| Coalinga—Nose | | | | | 52,749 | 47,341 |
| Coalinga—Northeast | 3 | | | 5 | 9,214 | 7,678 |
| Pleasant Valley | 1 | | | 1 | 4,322 | 3,463 |
| Jacalitos | | 1 | 1,250 | 14 | 4,619 | 4,095 |
| Westside | | 1 | 231 | 3 | 6,769 | 6,811 |
| Coles Levee—North | 3 | | | 6 | 17,059 | 15,801 |
| Coles Levee—South | 1 | 1 | 278 | 4 | 3,195 | |
| Edison | | | | 9 | 11,185 | 14,478 |
| Elk Hills | 5 | 1 | 139 | 12 | 3,835 | 7,614 |
| Fruitvale | | | | | 6,141 | 7,141 |
| Greeley | | | | | 14,068 | 10,919 |
| Helm | | | | 3 | 4,280 | 4,212 |
| Kern Front | 5 | 4 | 122 | 23 | 8,951 | 8,967 |
| Kern River | 8 | 12 | 591 | 56 | 10,382 | 9,636 |
| Kettleman North Dome | 4 | 2 | 465 | 12 | 35,803 | 37,285 |
| Lanare | | | | 2 | 1,683 | 2,435 |
| Lost Hills | 4 | 13 | 668 | 77 | 5,914 | 3,605 |
| **McKittrick Group** | | | | | | |
| Belgian Anticline | 2 | 1 | 456 | 3 | 736 | |
| Cymric | 2 | 1 | 190 | 27 | 16,258 | 10,185 |
| McKittrick | | | | 2 | 2,832 | 2,976 |
| McKittrick Front | | | | 9 | 1,704 | 1,623 |
| Salt Creek | 1 | 1 | 179 | 46 | 7,495 | 1,669 |
| Sheep Springs | | 2 | 600 | 3 | 998 | 535 |
| Temblor Ranch | 1 | | | 1 | 120 | 60 |
| Midway-Sunset | 7 | 6 | 712 | 41 | 43,318 | 41,716 |
| Mt. Poso Group | | 1 | 78 | 8 | 13,810 | 15,756 |
| Mountain View | 4 | | | 11 | 5,273 | 4,577 |
| Paloma | 4 | 3 | 1,504 | 31 | 9,651 | 6,804 |
| Poso Creek Group | | | | 10 | 3,481 | 3,339 |
| Pyramid Hills | | | | | 245 | 290 |
| Race Track Hill | 3 | | | 8 | 2,103 | 1,660 |
| Raisin City | | | | 1 | 2,455 | 2,798 |
| Rio Bravo | | | | | 12,347 | 13,064 |
| Riverdale | | | | 2 | 4,324 | 4,551 |
| Rosedale Ranch | | | | | 72 | 140 |
| Round Mountain Group | | | | 5 | 8,145 | 8,715 |
| Strand | | | | | 1,219 | 2,026 |
| Strand—East | | | | | 503 | 563 |
| Tejon Ranch | 1 | 2 | 222 | 21 | 3,479 | 1,682 |
| Ten Section | | 1 | 572 | 1 | 7,434 | 8,936 |
| Union Avenue | | | | | 310 | 390 |
| Wasco | | | | | 199 | 770 |
| Wheeler Ridge | | | | | 209 | 227 |
| Other Fields | 1 | 1 | 261 | 12 | 683 | 258 |
| TOTAL—San Joaquin Valley Region | 63 | 58 | 8,747 | 505 | 427,268 | 401,821 |
| **COASTAL REGION** | | | | | | |
| **Santa Maria District** | | | | | | |
| Casmalia | 1 | | | 1 | 753 | 409 |
| Cat Canyon—East | | | | | 756 | 285 |
| Cat Canyon—West | 2 | 5 | 1,219 | 32 | 10,888 | 8,117 |
| Four Deer | 1 | | | 2 | 256 | |
| Gato Ridge | | | | | 3,604 | 3,905 |

| | SEPTEMBER, 1947 DEVELOPMENT | | | | PRODUCTION | |
|---|---|---|---|---|---|---|
| | Active Drilling Wells | Oil Wells Completed | Initial Production B/D | Oil Wells Completed First 4 Months | Daily Average September 1947 | Daily Average September 1946 |
| **COASTAL REGION—Continued** | | | | | | |
| Lompoc | 1 | 2 | 218 | 33 | 5,037 | 1,082 |
| Orcutt | 1 | 3 | 282 | 22 | 4,761 | 3,389 |
| Santa Maria Valley | 4 | 3 | 308 | 23 | 23,613 | 31,103 |
| Tinaquaic | ..... | ..... | ..... | 1 | 14 | ..... |
| Zaca Creek | ..... | 1 | 218 | 1 | 593 | 249 |
| **Santa Barbara District** | | | | | | |
| Capitan | ..... | ..... | ..... | ..... | 3,310 | 3,522 |
| Elwood | 1 | ..... | ..... | 5 | 6,921 | 7,060 |
| Santa Barbara | ..... | ..... | ..... | ..... | 90 | 71 |
| Summerland | ..... | ..... | ..... | ..... | 3 | 3 |
| **Ventura District** | | | | | | |
| Montalvo West | 2 | ..... | ..... | 1 | 133 | ..... |
| Padre Canyon | 2 | ..... | 419 | 6 | 3,283 | 2,421 |
| Rincon | ..... | ..... | ..... | ..... | 3,485 | 4,346 |
| San Miguelito | 4 | 1 | 297 | 7 | 4,982 | 5,398 |
| Ventura Avenue | 8 | 4 | 1,794 | 34 | 51,477 | 47,542 |
| **North Santa Clara District** | | | | | | |
| Del Valle | 3 | 2 | 232 | 18 | 8,573 | 6,644 |
| Hopper Canyon | ..... | ..... | ..... | 1 | 193 | 243 |
| Oak Canyon | ..... | ..... | ..... | 1 | 1,947 | 1,674 |
| Ramona | ..... | ..... | ..... | 1 | ..... | ..... |
| Sespe Canyon Group | ..... | ..... | ..... | ..... | 183 | 293 |
| Temescal | ..... | ..... | ..... | ..... | 587 | 632 |
| Others | 1 | 1 | 195 | 2 | 351 | 232 |
| **South Santa Clara Valley District** | | | | | | |
| Aliso Canyon | 1 | 1 | 326 | 4 | 3,416 | 3,006 |
| Bardsdale | 1 | 1 | 97 | 3 | 459 | 396 |
| Newhall-Potrero | 3 | 1 | 101 | 7 | 6,638 | 5,929 |
| Oxnard | 1 | ..... | ..... | 1 | 1,525 | 884 |
| Shiells Canyon | ..... | ..... | ..... | 3 | 1,064 | 1,116 |
| South Mountain | 2 | 2 | 622 | 13 | 5,159 | 4,020 |
| Others | 3 | 1 | 46 | 21 | 1,755 | 416 |
| **San Luis Obispo and Santa Clara Counties** | ..... | ..... | ..... | 9 | 174 | 20 |
| TOTAL—Coastal Region | 42 | 29 | 6,374 | 254 | 155,983 | 144,407 |
| **LOS ANGELES REGION** | | | | | | |
| Brea-Olinda | 2 | 2 | 876 | 20 | 12,533 | 10,833 |
| Coyote—East | 1 | 2 | 54 | 10 | 4,752 | 4,813 |
| Coyote—West | 2 | 2 | 138 | 15 | 14,811 | 14,782 |
| Dominguez | 3 | 1 | 40 | 10 | 14,197 | 15,784 |
| East Los Angeles | 2 | ..... | ..... | 3 | 1,243 | 769 |
| El Segundo | ..... | ..... | ..... | ..... | 441 | 562 |
| Huntington Beach | 14 | 14 | 819 | 62 | 50,169 | 46,765 |
| Inglewood | 1 | 1 | 321 | 2 | 11,496 | 12,530 |
| Long Beach | 2 | ..... | ..... | 8 | 23,178 | 24,080 |
| Montebello | ..... | ..... | ..... | 1 | 6,996 | 8,129 |
| Newport | 3 | 2 | 172 | 44 | 6,883 | 6,177 |
| Playa Del Rey | ..... | ..... | ..... | ..... | 2,067 | 2,262 |
| Potrero | 1 | ..... | ..... | 1 | 977 | 789 |
| Richfield | ..... | ..... | ..... | 6 | 6,511 | 7,098 |
| Rosecrans-Athens Group | 2 | ..... | ..... | 2 | 4,516 | 5,010 |
| Santa Fe Springs | ..... | 1 | 5 | 1 | 16,080 | 16,523 |
| Seal Beach | 4 | ..... | ..... | 11 | 10,831 | 10,269 |
| Torrance | ..... | ..... | ..... | 2 | 7,782 | 8,405 |
| Whittier | ..... | ..... | ..... | 1 | 959 | 982 |
| Wilmington | 27 | 28 | 11,149 | 159 | 132,747 | 120,711 |
| Yorba Linda | ..... | ..... | ..... | ..... | 172 | 220 |
| Other Fields | 2 | ..... | ..... | 3 | 2,155 | 1,608 |
| TOTAL—Los Angeles Region | 66 | 53 | 13,574 | 361 | 331,496 | 319,101 |
| **EXPLORATORY** | | | | | | |
| Outpost Wells | 28 | ..... | ..... | ..... | ..... | ..... |
| Wildcats | 18 | ..... | ..... | ..... | ..... | ..... |
| Gas Wells | 3 | 5 | Gas | 41 | ..... | ..... |
| TOTAL CALIFORNIA | 220 | 145 | 28,695 | 1449* | 914,747 | 865,329 |

*Includes gas wells completed and 288 drilling wells abandoned.




*Introducing-*

# THE NEW N-2

- **FOR DRILLING TO 2000′**
- **FOR SERVICING TO 6000′**

Here is the latest addition to the line of fine Brewster Rigs . . . the N-2. It is designed and engineered for the driller who needs a small compact drawworks suitable for drilling to 2000′ or for servicing wells to 6000′. The transmission has 5 speeds forward and one reverse. Big, powerful, equalized 6″ x 36″ brakes. Weight complete 10,200 lbs.

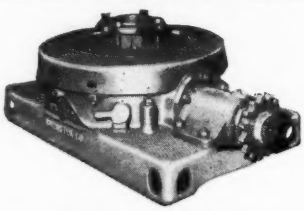
## . . . . AVAILABLE WITH *MATCHED* EQUIPMENT

**H-50**
**HOOK BLOCK**

A compact and short coupled block, ideal for portable rigs where derrick height is limited. Roller bearing sheaves. Hook swivels on roller thrust bearing and locks in 4 positions.

**3-S**
**OILBATH SWIVEL**

A swivel engineered as matched equipment for the N-2 Drawworks. Three roller bearings run submerged in oil. Streamlined body provides large oil reservoir. Capacity 50 tons.



**OB-12 OILBATH ROTARY.** Full 12″ table opening. Positive oilbath lubrication for ring and pinion gears, table ball bearings, and double-row roller bearings on pinion. Available with short or extended pinion shaft.

Sold by These Supply Stores:

**BOVAIRD SUPPLY CO.** • **INDUSTRIAL SUPPLY CO.**

Export Sales: • **REAMS SUPPLY CO.** •

**BAIRD SUPPLY CO., INC., 420 Lexington Ave., New York 17, N.Y.**

**The BREWSTER CO. Inc.**

Manufacturers of Drilling Equipment Since 1910

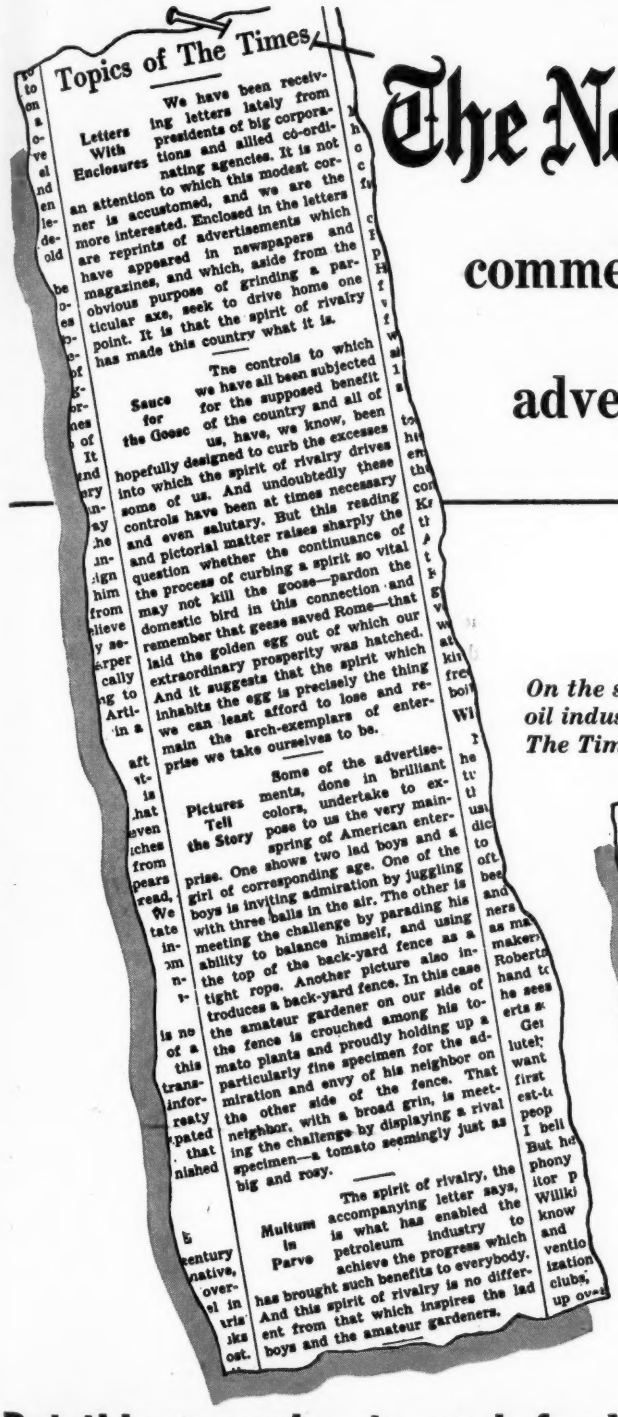
SHREVEPORT, LOUISIANA, U.S.A.

**BREWSTER**

*Drilling Equipment*

# The New York Times

## comments on Petroleum's new advertising campaign



Topics of The Times

**Letters With Enclosures**

We have been receiving letters lately from presidents of big corporations and allied co-ordinating agencies. It is not an attention to which this modest corner is accustomed, and we are the more interested. Enclosed in the letters are reprints of advertisements which have appeared in newspapers and magazines, and which, aside from the obvious purpose of grinding a particular axe, seek to drive home one point. It is that the spirit of rivalry has made this country what it is.

**Sauce for the Goose**

The controls to which we have all been subjected for the supposed benefit of the country and all of us, have, we know, been hopefully designed to curb the excesses into which the spirit of rivalry drives some of us. And undoubtedly these controls have been at times necessary and even salutary. But this reading and pictorial matter raises sharply the question whether the continuance of the process of curbing a spirit so vital may not kill the goose—pardon the domestic bird in this connection—and remember that geese saved Rome—that laid the golden egg out of which our extraordinary prosperity was hatched. And it suggests that the spirit which inhabits the egg is precisely the thing we can least afford to lose and remain the arch-exemplars of enterprise we take ourselves to be.

**Pictures Tell the Story**

Some of the advertisements, done in brilliant colors, undertake to expose to us the very mainspring of American enterprise. One shows two lad boys and a girl of corresponding age. One of the boys is inviting admiration by juggling with three balls in the air. The other is meeting the challenge by parading his ability to balance himself, and using the top of the back-yard fence as a tight rope. Another picture also introduces a back-yard fence. In this case the amateur gardener on our side of the fence is crouched among his tomato plants and proudly holding up a particularly fine specimen for the admiration and envy of his neighbor on the other side of the fence. That neighbor, with a broad grin, is meeting the challenge by displaying a rival specimen—a tomato seemingly just as big and rosy.

**Multum in Parvo**

The spirit of rivalry, the accompanying letter says, is what has enabled the petroleum industry to achieve the progress which has brought such benefits to everybody. And this spirit of rivalry is no different from that which inspires the lad boys and the amateur gardeners.

*On the subject of the oil industry's advertising, The Times continues . . .*

**Mark Twain Is Responsible**

No mention is made by the petroleum spokesman of the use to which Tom Sawyer put the spirit of rivalry when it came to a whitewashing job. That, we submit, is a classic example of American enterprise, and one which, in the past, has not lacked admiration—or imitation in circles less juvenile. In such cases it has been roundly denounced as exploitation.

In Tom Sawyer, too, the American spirit spoke—and spoke in native accents. But the accent today is no longer on exploitation. Rivalry has become not a race for private profit but the firm foundation upon which rests the entire fabric of our national economy. It must be preserved.

Reprinted courtesy of *The New York Times*

## Put this campaign to work for YOU

● Petroleum's informative and dramatic national campaign in LIFE, LOOK, COLLIER'S and SATURDAY EVENING POST can go to work directly for *you*. Each ad can tell your local audience important facts about your branch of the business. All you have to do is personalize these ads over your own company's signature. A FREE Plan Book has been prepared to make this tie-in practical and easy for you.

***Just Mail the Coupon***

. . . to get a complete promotion portfolio. This detailed Plan Book offers FREE mats of seven complete and different newspaper campaigns, plus display material, radio scripts, envelopes, enclosures — the complete promotion picture for *your* firm.

**DON'T DELAY—ACT NOW**

Send for your free Plan Book at once. Available to managers and officers of all oil companies, oil associations and affiliated organizations.

***Mail this coupon today.***

Public Relations Operating Committee, Dept. 2F
AMERICAN PETROLEUM INSTITUTE
670 Fifth Avenue, New York 19, N. Y.

Please forward at once FREE copy of Plan Book.

*Name* .....
*Title* .....
*Company* .....
*Address* .....
*City* ..... *State* .....

## National Issues Bulletins on Rotary Machine and Swivels

The National Supply Company has issued a new 12-page, well illustrated bulletin on the Ideal MS-20½ Rotary Machine, designed for medium speed drilling and for moderately deep holes. The Bulletin, No. 342, supersedes Bulletin No. 299. It includes specifications, line drawings, general description of main parts, including spiral bevel gear, and lubrication.

Swivel Bulletin No. 364, 8 pages, 8½ x 11 in. Describes and profusely illustrates the Ideal Type D Swivel, a medium swivel rated at 150 tons at 150 rpm. The bulletin includes specifications, life expectancy chart showing the influence of loading and speed on the performance of the main bearing, and a description of construction, design, and materials in the D-swivel and accessories, with "exploded" and cutaway views of parts and assembly. The bulletins can be obtained by writing The National Supply Company, P. O. Box 899A, Toledo 1, Ohio.

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## San Ardo Area Adds New Test

The Texas Co. has started another well in the San Ardo area of Monterey County, where it recently scored a discovery with its Lombardi No. 1.

The new test is known as Rosenberg No. 1 and is located 2370 ft. west and 2420 ft. north from the Lombardi venture in Sec. 27-22s-10e. It has been spudded and is drilling ahead at 205 ft.

A large acreage holder in the area is the Jergins-North American Oil Consolidated combination, which is not likely to start a drilling job until Texas Co.'s current undertaking gives a more revealing picture of the oil possibilities of the area.

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## Saticoy Try Deep

Superior Oil's Saticoy No. 1 on wildcat ground near Saticoy in Ventura County is drilling at 10,661 ft. The drill site falls in Sec. 10-2n-22w.

## Jacalitos Test Drills

Near the Jacalitos field, discovered by Wilshire Annex Oil in 1941, Standard is prospecting at 7000 ft. with Ferguson No. 21-6N in Sec. 6-22s-16e, Fresno County. The company's No. 73-1Y in Sec. 1-30s-21e in the McKittrick area is standing with casing cemented at 1200 ft. Bottom is 1380 ft.

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## Kern Bluff Well On Pump

Pump is being installed on Oceanic Oil and Universal Consolidated's Needham-Bloemer No. 27 in Sec. 7-29s-29e in the Kern Bluff area. Bottom is 900 ft. No. 14 is running liner, after the hole was plugged back from 990 ft. to 930 ft. No. 15 is a location, No. 26 is grading and No. 28 rigging up.

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Santa Maria Drilling Co., E. R. (Ray) Norris and Ed J. Simonis, has just completed General Petroleum's Padre No. 8 in the Padre Canyon field. The initial output was 435 barrels from a finishing depth of 5610 ft. Simonis is an officer of the California chapter of the AAODC and a leader in contract drilling circles.

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## So. Mountain Well Grading

Grading is in progress for Volunteer Petroleum's Junior No. 1 in Sec. 19-3n-20w in the South Mountain area, Ventura County.

**"Nope, I reckon I won't sell it. It's the last one I got and I'd just have to order more at a higher price!"**

## M. O. Johnston Issues Bulletin

M. O. Johnston Oil Field Service Company, Los Angeles, California, has recently published informative literature on two of their oil tool specialties. Copies of the following may be obtained by writing the company, 3035 Andrita Street, Los Angeles 41, California.

An 8-page Perf-Test Brochure describes the construction and uses of the All-Purpose Johnston Gun Perforator and tells how it functions in combination perforating and formation testing operations.

A comprehensive treatise on the Johnston Formation Tester explains the engineering features of the Johnston Formation Tester and Accessory Equipment and gives detailed instructions and illustrations on all phases of formation testing.

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Sometime before the holidays, Republican leaders are planning to introduce a new measure to slash personal income taxes. The prime requisite of the new measure probably will be an increase of $100 in personal income tax exemptions and the consequent removal of approximately 6,000,000 taxpayers from the tax rolls. A general cut also is likely to be sought. Passage of such a measure is not foreseen before March 15, 1948.

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The fate of three continents depends on keeping the oil fields of the Middle East out of the hand of an "unfriendly great power." This was the opinion expressed by Loy W. Henderson, policy maker for the Department of State, at the meeting of the API in Chicago.

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